DCR-HC47E/HC48/HC48E

RMT-831

SERVICE MANUAL

LEVEL 2

Ver. 1.1 2007.03
Revision History

How to use Acrobat Reader

Photo: DCR-HC48

US Model
Canadian Model
AEP Model
UK Model
East European Model
North European Model
E Model
Australian Model
Chinese Model
Korea Model
Tourist Model
Japanese Model

N MECHANISM (MDX-N110)

Link

SPECIFICATIONS	DISASSEMBLY	SCHEMATIC DIAGRAMS
MODEL INFORMATION TABLE	BLOCK DIAGRAMS	PRINTED WIRING BOARDS
SERVICE NOTE	FRAME SCHEMATIC DIAGRAM	REPAIR PARTS LIST

- Precaution on Replacing the VC-472 Board

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Mini DV Digital Video Cassette

DIGITAL VIDEO CAMERA RECORDER

SONY®

DCR-HC47E/HC48/HC48E_L2
9-852-170-31

Sony EMCS Co.

2007C0500-1
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Published by Kohda TEC

These specifications are extracted from instruction manual of DCR-HC47E/HC48E.

ENGLISH | JAPANESE

Self Diagnosis Supported model

HANDYCAM

MEMORY STICK ™

InfoLITHIUM ™ H SERIES

SPECIFICATIONS

System

Video recording system
2 rotary heads, Helical scanning system
Still image recording system
Exif Ver. 2.2*
Audio recording system
Rotary heads, PCM system
Quantization: 12 bits (Fs 32 kHz, stereo 1, stereo 2), 16 bits (Fs 48 kHz, stereo)
Video signal
PAL color, CCIR standards
Usable cassette
Mini DV cassette with the Mini DV mark printed
Tape speed
SP: Approx. 18.81 mm/s
LP: Approx. 12.56 mm/s
Recording/playback time
SP: 60 min (using a DVM60 cassette)
LP: 90 min (using a DVM60 cassette)
Fast forward/rewind time
Approx. 2 min 40 s (using a DVM60 cassette and rechargeable battery pack)
Approx. 1 min 45 s (using a DVM60 cassette and AC Adaptor)
Viewfinder
Electric viewfinder (0.27 type, aspect ratio 16:9, 123 200 dots)
Image device
3 mm (1/6 type) CCD (Charge Coupled Device)
Gross: Approx. 1 070 000 pixels
Effective (still): 1 000 000 pixels
Effective (movie): 690 000 pixels
Lens
Carl Zeiss Vario-Tessar
25 × (Optical), 2 000 × (Digital)
Focal length
f=2.5 ~ 62.5 mm (1/8 ~ 2 1/2 in.)
When converted to a 35 mm still camera
In CAMERA-TAPE:
41 ~ 1 189 mm** (1 5/8 ~ 46 7/8 in.) (16:9)
43 ~ 1 075 mm (1 3/4 ~ 42 3/8 in.) (4:3)
In CAMERA-MEMORY:
36 ~ 900 mm (1 7/16 ~ 35 1/2 in.) (4:3)
39 ~ 975 mm (1 9/16 ~ 38 1/2 in.) (16:9)
F1.8 ~ 3.2
Filter diameter: 30 mm (1 3/16 in.)
Color temperature
[AUTO], [ONE PUSH], [INDOOR] (3 200 K), [OUTDOOR] (5 800 K)
Minimum illumination
4 lx (lux) (AUTOSLW SHTR ON, Shutter speed 1/25 s)
0 lx (lux) (during NightShot plus function)

* "Exif" is a file format for still images, established by the JEITA (Japan Electronics and Information Technology Industries Association). Files in this format can have additional information such as your camcorder's setting information at the time of recording.

** The focal length figures are actual figures resulting from wide angle pixel read-out.

Output connectors

Audio/Video output
10-pin connector
Video signal: 1 Vp-p, 75 Ω (ohms)
Luminance signal: 1 Vp-p, 75 Ω (ohms)
Chrominance signal: 0.3 Vp-p, 75 Ω (ohms)
Audio signal: 327 mV (at load impedance 47 kΩ (kilohms)), Output impedance with less than 2.2 kΩ (kilohms)

LCD screen

Picture
6.9 cm (2.7 type, aspect ratio 16:9)
Total dot number
123 200 (560 × 220)

General

Power requirements
DC 6.8 V/7.2 V (battery pack)
DC 8.4 V (AC Adaptor)
Average power consumption
During camera recording using the viewfinder 2.5 W
During camera recording using the LCD 2.8 W
Operating temperature
0 °C to 40 °C (32 °F to 104 °F)
Storage temperature
-20 °C to + 60 °C (-4 °F to + 140 °F)
Dimensions (approx.)
63 × 85 × 114 mm
(2 1/2 × 3 3/8 × 4 1/2 in.) (w/h/d) including the projecting parts
63 × 85 × 115 mm
(2 1/2 × 3 3/8 × 4 5/8 in.) (w/h/d) including the projecting parts with supplied battery pack NP-FH40 attached
Mass (approx.)
400 g (14 oz) main unit only,
465 g (1 lb) including the NP-FH40 rechargeable battery pack and DVM60 cassette
Supplied accessories
AC Adaptor (1)
Mains lead (1)
Handycam Station (1)
Wireless Remote Commander (1)
A/V connecting cable (1)
USB cable (1)
Rechargeable battery pack NP-FH40 (1)
CD-ROM "Handycam Application Software" (1)
21-pin adaptor (1)
Operating Guide (1)
See page 5-21.

Handycam Station Input/Output connectors

DCRA-C155 (DCR-HC48E)

Audio/Video output
10-pin connector
Video signal: 1 Vp-p, 75 Ω (ohms)
Luminance signal: 1 Vp-p, 75 Ω (ohms)
Chrominance signal: 0.3 Vp-p, 75 Ω (ohms)
Audio signal: 327 mV (at load impedance 47 kΩ (kilohms)), Output impedance with less than 2.2 kΩ (kilohms)
USB jack
mini-B
DV input/output
i.LINK Interface (IEEE1394, 4-pin connector S100)

DCRA-C156 (DCR-HC47E)

Audio/Video output
10-pin connector
Video signal: 1 Vp-p, 75 Ω (ohms)
Luminance signal: 1 Vp-p, 75 Ω (ohms)
Chrominance signal: 0.3 Vp-p, 75 Ω (ohms)
Audio signal: 327 mV (at load impedance 47 kΩ (kilohms)), Output impedance with less than 2.2 kΩ (kilohms)
USB jack
mini-B
DV output
i.LINK Interface (IEEE1394, 4-pin connector S100)

AC Adaptor AC-L200/L200B

Power requirements
AC 100 - 240 V, 50/60 Hz
Current consumption
0.35 - 0.18 A
Power consumption
18 W
Output voltage
DC 8.4 V*
Operating temperature
0 °C to 40 °C (32 °F to 104 °F)
Storage temperature
-20 °C to + 60 °C (-4 °F to + 140 °F)
Dimensions (approx.)
48 × 29 × 81 mm
(1 15/16 × 1 3/16 × 3 1/4 in.) (w/h/d) excluding the projecting parts
Mass (approx.)
170 g (6.0 oz) excluding the mains lead

* See the label on the AC Adaptor for other specifications.

Rechargeable battery pack NP-FH40

Maximum output voltage
DC 8.4 V
Output voltage
DC 7.2 V
Capacity
4.9 Wh (680 mAh)
Dimensions (approx.)
31.8 × 18.5 × 45.0 mm
(1 5/16 × 3/4 × 1 13/16 in.) (w/h/d)
Mass (approx.)
45 g (1.6 oz)
Operating temperature
0 °C to 40 °C (32 °F to 104 °F)
Type
Lithium ion

Design and specifications are subject to change without notice.

自己診断搭載機種

概略仕様

システム

録画方式
回転2ヘッドヘリカルスキャン

静止画記録方式
Exif Ver.2.2*1

録音方式
回転2ヘッド
12ビット32kHz(ステレオ1、ステレオ2)
16ビット48kHz(ステレオ)

映像信号
NTSCカラー、EIA標準方式

使用可能カセット
Mini DV マークのついたミニDVカセット

テープ速度
SP:約18.81mm/秒
LP:約12.56mm/秒

録画/再生時間
SP:60分(DVM60使用時)
LP:90分(DVM60使用時)

早送り、巻き戻し時間
バッテリー使用時:
約2分40秒(DVM60使用時)
ACアダプター使用時:
約1分45秒(DVM60使用時)

ファインダー
電子ファインダー(0.27型、アスペクト比16:9、123 200ドット)

撮像素子
3.0mm(1/6型)CCD固体撮像素子
総画素数:約107万画素
静止画時有効画素数:約100万画素
動画時有効画素数:約69万画素

ズームレンズ
カール ツァイス バリオテッサー
25倍(光学)、2 000倍(デジタル)
f=2.5〜62.5mm
35mmカメラ換算では
「撮る−テープ」時:
41〜1 189mm(16:9モード)*2
(4:3モードでは43〜1 075mm)
「撮る−メモリー」時:
36〜900mm(4:3モード)
(16:9モードでは39〜975mm)
F1.8〜3.2
フィルター径30mm

色温度切り換え
[オート]、[ワンプッシュ]、
[屋内](3 200K)、
[屋外](5 800K)

最低被写体照度
8lx(ルクス)(オートスローシャッター 入、シャッタースピード1/30秒)
0lx(ルクス)(NightShot plus時)

*1 (社)電子情報技術産業協会(JEITA)にて制定された、撮影情報などの付帯情報を追加することができる静止画用のファイルフォーマット。

*2 広角画素読み出しによる実動作値

出力端子

A/V OUT端子
10ピン特殊コネクター
映像:1Vp-p、75Ω
Y出力 1Vp-p、75Ω
C出力 0.286Vp-p、75Ω
音声:327mV(47kΩ負荷時)、出力インピーダン ス2.2kΩ以下

液晶画面

画面サイズ
6.9cm(2.7型、アスペクト比16:9)

総ドット数
123 200ドット
横560×縦220

電源部、その他

電源電圧
バッテリー端子入力6.8V/7.2V
DC端子入力8.4V

消費電力
2.5W(ファインダー使用時、明るさ標準)
2.8W(液晶画面使用時、明るさ標準)

動作温度
0℃〜+40℃

保存温度
−20℃〜+60℃

外形寸法
63×85×114mm(幅×高さ×奥行き)(突起部含む)
63×85×115mm(幅×高さ×奥行き)(突起部含む、付属バッテリーパックNP-FH40装着状態)

本体質量
約400g(本体のみ)

撮影時総質量
約465g(バッテリーNP-FH40、テープ(DVM60)含む。)

付属品
ACアダプター(1)
電源コード(1)
ハンディカムステーション(1)
ワイヤレスリモコン(1)
AV接続ケーブル(1)
USBケーブル(1)
リチャージャブルバッテリーパック NP-FH40(1)
CD-ROM「Handycam Application Software」(1)
取扱説明書(1)
保証書(1)

ハンディカムステーション 入出力端子 DCRA-C155

A/V OUT端子
10ピン特殊コネクター
映像:1Vp-p、75Ω
Y出力 1Vp-p、75Ω
C出力 0.286Vp-p、75Ω
音声:327mV(47kΩ負荷時)、出力インピーダンス2.2kΩ以下

USB端子
mini-B

DV端子
i.LINK(IEEE1394 4ピンコネクターS100)

ACアダプター AC-L200/L200B

電源
AC100〜240V、50/60Hz

消費電力
18W

定格出力
DC8.4V *

動作温度
0℃〜+40℃

保存温度
−20℃〜+60℃

外形寸法
約48×29×81mm(最大突起部をのぞく)(幅×高さ×奥行き)

質量
約170g(本体のみ)

* その他の仕様については AC アダプターのラベルをご覧ください。

リチャージャブルバッテリーパック NP-FH40

最大電圧
DC8.4V

公称電圧
DC7.2V

容量
4.9Wh(680mAh)

最大外形寸法
約31.8×18.5×45.0mm(幅×高さ×奥行き)

質量
約45g

使用温度
0℃〜+40℃

使用電池
Li-ion

本機の仕様および外観は、改良のため予告なく変更することがありますが、ご了承ください。

Model information table

Model	DCR-HC47E	DCR-HC48	DCR-HC48E
Destination	AEP, UK, EE, NE	US, CND, E, KR, JE, J	NE, E, AUS, CH, JE
Color system	PAL	NTSC	PAL
DV Interface on the Cradle (Handycam Station)	OUT	IN/OUT	IN/OUT

- Abbreviation
  AR : Argentine model
  AUS : Australian model
  BR : Brazilian model
  CH : Chinese model
  CND : Canadian model
  EE : East European model
  HK : Hong Kong model
  J : Japanese model
  JE : Tourist model
  KR : Korea model
  NE : North European model

CAUTION
Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈSES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPÉMENTS PUBLIÉS PAR SONY.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer.

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, through functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the B+ voltage to see it is at the values specified.
6. Flexible Circuit Board Repairing
   - Keep the temperature of the soldering iron around 270˚C during repairing.
   - Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
   - Be careful not to apply force on the conductor when soldering or unsoldering.

Unleaded solder

Boards requiring use of unleaded solder are printed with the lead-free mark (LF) indicating the solder contains no lead.
(Caution: Some printed circuit boards may not come printed with the lead free mark due to their particular size.)

: LEAD FREE MARK

Unleaded solder has the following characteristics.

- Unleaded solder melts at a temperature about 40°C higher than ordinary solder.
  Ordinary soldering irons can be used but the iron tip has to be applied to the solder joint for a slightly longer time.
  Soldering irons using a temperature regulator should be set to about 350°C.
  Caution: The printed pattern (copper foil) may peel away if the heated tip is applied for too long, so be careful!
- Strong viscosity
  Unleaded solder is more viscous (sticky, less prone to flow) than ordinary solder so use caution not to let solder bridges occur such as on IC pins, etc.
- Usable with ordinary solder
  It is best to use only unleaded solder but unleaded solder may also be added to ordinary solder.

注意
電池の交換は，正しく行わないと破裂する恐れがあります。電池を交換する場合には必ず同じ型名の電池又は同等品と交換してください。

サービス，点検時には次のことにご注意下さい。

1. 注意事項をお守りください。
   サービスのとき特に注意を要する個所については，キャビネット，シャーシ，部品などにラベルや捺印で注意事項を表示しています。これらの注意書き及び取扱説明書等の注意事項を必ずお守り下さい。
2. 指定部品のご使用を
   セットの部品は難燃性や耐電圧など安全上の特性を持ったものとなっています。従って交換部品は，使用されていたものと同じ特性の部品を使用して下さい。特に回路図，部品表に⚠印で指定されている安全上重要な部品は必ず指定のものをご使用下さい。
3. 部品の取付けや配線の引きまわしはもとどおりに
   安全上，チューブやテープなどの絶縁材料を使用したり，プリント基板から浮かして取付けた部品があります。また内部配線は引きまわしやクランパによって発熱部品や高圧部品に接近しないよう配慮されていますので，これらは必ずもとどおりにして下さい。
4. サービス後は安全点検を
   サービスのために取外したネジ，部品，配線がもとどおりになっているか，またサービスした個所の周辺を劣化させてしまったところがないかなどを点検し，安全性が確保されていることを確認して下さい。
5. チップ部品交換時の注意
   - 取外した部品は再使用しないで下さい。
   - タンタルコンデンサのマイナス側は熱に弱いため交換時は注意して下さい。
6. フレキシブルプリント基板の取扱いについて
   - コテ先温度を270℃前後にして行なって下さい。
   - 同一パターンに何度もコテ先を当てないで下さい。（3回以内）
   - パターンに力が加わらないよう注意して下さい。
7. 無鉛半田について
   無鉛半田を使用している基板には，無鉛（Lead Free）を意味するレッドフリーマークがプリントされています。
   （注意：基板サイズによっては，無鉛半田を使用していてもレッドフリーマークがプリントされていないものがあります）
   LF：レッドフリーマーク
   無鉛半田には，以下の特性があります。
   - 融点が従来の半田よりも約40℃高い。
     従来の半田こてをそのまま使用することは可能ですが，少し長めにこてを当てる必要があります。
     温度調節機能のついた半田こてを使用する場合，約350℃に設定して下さい。
     注意：半田こてを長く当てすぎると，基板のパターン（銅箔）がはがれてしまうことがありますので，注意して下さい。
   - 粘性が強い
     従来の半田よりも粘性が強いため，IC端子などが半田ブリッジしないように注意して下さい。
   - 従来の半田と混ぜて使用可能
     無鉛半田には無鉛半田を追加するのが最適ですが，従来の半田を追加しても構いません。

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1. SERVICE NOTE

ENGLISH | JAPANESE

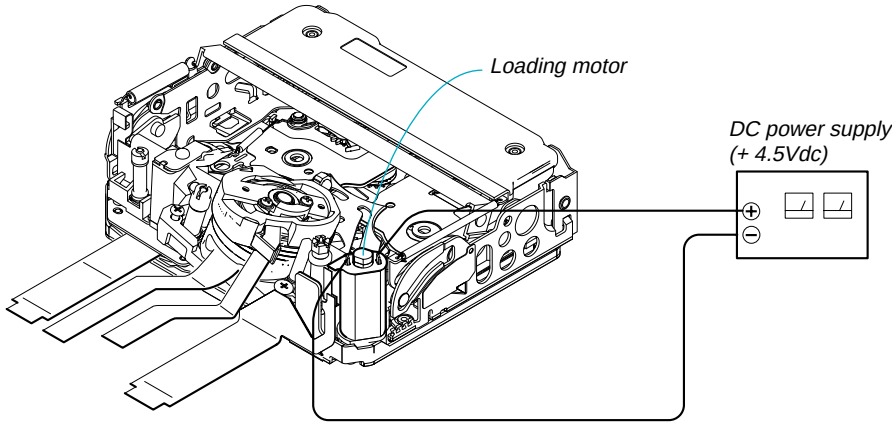
1-1. POWER SUPPLY DURING REPAIRS

In this unit, about 10 seconds after power is supplied to the battery terminal using the regulated power supply (8.4V), the power is shut off so that the unit cannot operate.
These following method is available to prevent this.

Method:
Use the AC power adaptor (AC-L200/L200B).

1-2. TO TAKE OUT A CASSETTE WHEN NOT EJECT (FORCE EJECT)

① Refer to "2. DISASSEMBLY" to remove the mechanism deck block.
② Supply +4.5V from the DC power supply to the loading motor and unload with a pressing the cassette compartment.



1-3. SETTING THE "FORCED POWER ON" MODE

It is possible to turn on power by adjustment remote commander (RM-95 or NEW LANC JIG).
Operate the VTR function using the adjustment remote commander.

1-3-1. Setting the "Forced Camera Power ON" Mode

1) Select page: 0, address: 01, and set data:01.
2) Select page: A, address: 10, set data:01 and press the "PAUSE (Write) " button of the adjustment remote commander.

1-3-2. Setting the "Forced VTR Power ON" Mode

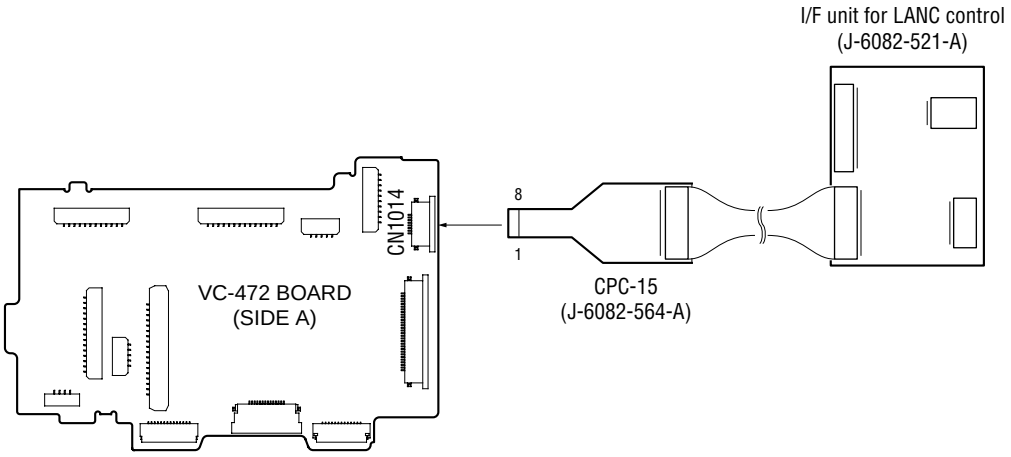
1) Select page: 0, address: 01, and set data:01.
2) Select page: A, address: 10, set data:02 and press the "PAUSE (Write) " button of the adjustment remote commander.

1-3-3. Exiting the "Forced Power ON" Mode

1) Select page: 0, address: 01, and set data:01.
2) Select page: A, address: 10, set data:00 and press the "PAUSE (Write) " button of the adjustment remote commander.
3) Select page: 0, address: 01, and set data: 00.

1-4. USING SERVICE JIG

Connect the CPC-15 jig connector (J-6082-564-A) and I/F unit for LANC control (J-6082-521-A) to the CN1014 of VC-472 board.



1-5. SELF-DIAGNOSIS FUNCTION

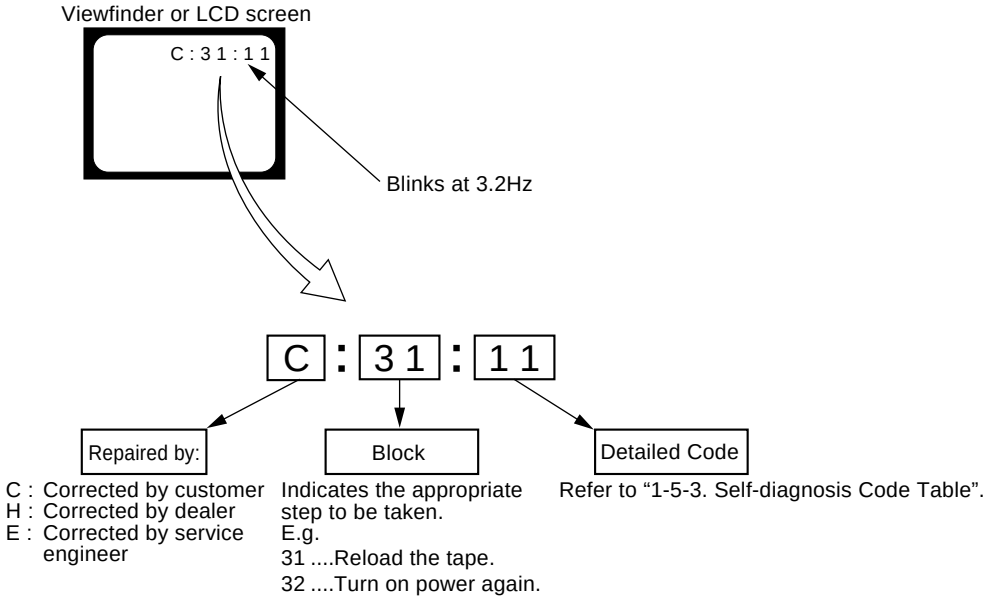
1-5-1. Self-diagnosis Function

When problems occur while the unit is operating, the self-diagnosis function starts working, and displays on the viewfinder or LCD screen what to do.

Details of the self-diagnosis functions are provided in the Instruction manual.

1-5-2. Self-diagnosis Display

When problems occur while the unit is operating, the counter of the viewfinder or LCD screen shows a 4-digit display consisting of an alphabet and numbers, which blinks at 3.2 Hz. This 5-character display indicates the “repaired by:”, “block” in which the problem occurred, and “detailed code” of the problem.


Viewfinder or LCD screen
C : 3 1 : 1 1
Blinks at 3.2Hz
C : 31 : 11
Repaired by:
Block
Detailed Code
C : Corrected by customer
H : Corrected by dealer
E : Corrected by service engineer
Indicates the appropriate step to be taken.
E.g.
31 ....Reload the tape.
32 ....Turn on power again.
Refer to “1-5-3. Self-diagnosis Code Table”.

1-5-3. Self-diagnosis Code Table

Self-diagnosis Code					Symptom/State	Correction
Repaired by:	Block Function		Detailed Code			
C	0	4	0	0	Non-standard battery is used.	Use the InfoLITHIUM battery.
C	2	1	0	0	Condensation.	Remove the cassette, and insert it again after one hour.
C	2	2	0	0	Video head is dirty.	Clean with the optional cleaning cassette.
C	3	1	1	0	LOAD direction. Loading does not complete within specified time	Load the tape again, and perform operations from the beginning.
C	3	1	1	1	UNLOAD direction. Loading does not complete within specified time	Load the tape again, and perform operations from the beginning.
C	3	1	2	0	T reel side tape slacking when unloading.	Load the tape again, and perform operations from the beginning.
C	3	1	2	1	S reel side tape slacking when unloading.	Load the tape again, and perform operations from the beginning.
C	3	1	2	2	T reel fault.	Load the tape again, and perform operations from the beginning.
C	3	1	2	3	S reel fault.	Load the tape again, and perform operations from the beginning.
C	3	1	3	0	FG fault when starting capstan.	Load the tape again, and perform operations from the beginning.
C	3	1	3	1	FG fault during normal capstan operations.	Load the tape again, and perform operations from the beginning.
C	3	1	4	0	FG fault when starting drum.	Load the tape again, and perform operations from the beginning.
C	3	1	4	1	PG fault when starting drum.	Load the tape again, and perform operations from the beginning.
C	3	1	4	2	FG fault during normal drum operations.	Load the tape again, and perform operations from the beginning.
C	3	1	4	3	PG fault during normal drum operations.	Load the tape again, and perform operations from the beginning.
C	3	1	4	4	Phase fault during normal drum operations.	Load the tape again, and perform operations from the beginning.
C	3	2	1	0	LOAD direction loading motor time-out.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	1	1	UNLOAD direction loading motor time-out.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	2	0	T reel side tape slacking when unloading.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	2	1	S reel side tape slacking when unloading.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	2	2	T reel fault.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	2	3	S reel fault.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	3	0	FG fault when starting capstan.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	3	1	FG fault during normal capstan operations.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	4	0	FG fault when starting drum.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	4	1	PG fault when starting drum.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	4	2	FG fault during normal drum operations.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	4	3	PG fault during normal drum operations.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	4	4	Phase fault during normal drum operations.	Remove the battery or power cable, connect, and perform operations from the beginning.

Self-diagnosis Code			Symptom/State	Correction
Repaired by:	Block Function	Detailed Code		
E	6 1	0 0	Difficult to adjust focus (Cannot initialize focus.)	Inspect the lens block focus reset sensor (Pin ⑦ of CN3801 of VC-472 board) when focusing is performed when the touch panel is operated in the focus manual mode and the focus motor drive circuit (IC3802 of VC-472 board) when the focusing is not performed.
E	6 1	1 0	Zoom operations fault (Cannot initialize zoom lens.)	Inspect the lens block zoom reset sensor (Pin ⑪ of CN3801 of VC-472 board) when zooming is performed when the zoom switch is operated and the zoom motor drive circuit (IC3802 of VC-472 board) when zooming is not performed.
E	6 1	1 1	Focus lens initializing failure and zoom lens initializing failure occur simultaneously.	Inspect the flexible board for breakage or loose connection. If not faulty, inspect the focus and zoom motor drive circuit (IC3802 of VC-472 board).
E	6 2	0 0	Steadyshot function does not work well. (With pitch angular velocity sensor output stopped.)	Inspect pitch angular velocity sensor (SE7002 of CD-672 board) peripheral circuits.
E	6 2	0 1	Steadyshot function does not work well. (With yaw angular velocity sensor output stopped.)	Inspect yaw angular velocity sensor (SE7001 of CD-672 board) peripheral circuits.

1-6. PRECAUTION ON REPLACING THE VC-472 BOARD

Exif Model Data Check

When you replace to the repairing board, the written data of repairing board also might be changed to original setting.
When the data has changed because of board replaceing etc, check the data setting (Exif Model Data) is right. If not, rewrite to the right value.

Exif Model Data

Page	Address	Data		
		DCR-HC47E	DCR-HC48	DCR-HC48E
C	D2	34	34	34
C	D3	37	38	38
C	D4	45	00	45

Writing Method:

1) Select page: 0, address: 01 and set data: 01.
2) Select page: C, address: D2 to D4, and set the Exif Model Data.
   Note: To write in the non-volatile memory (EEPROM), press the PAUSE (Write) button each time to set the data.
3) Select page: 0, address: 01, and set data: 00.

1. SERVICE NOTE

ENGLISH JAPANESE

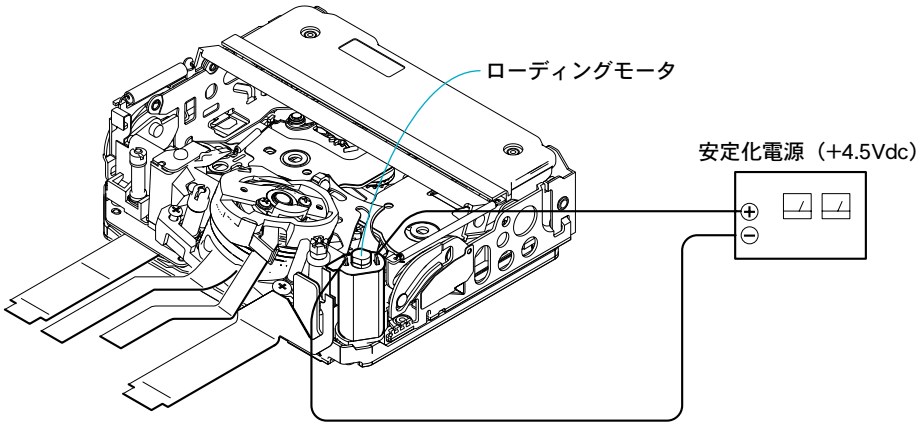
1-1. 修理時の電源供給について

本機では，安定化電源（8.4Vdc）からバッテリ端子に電源を供給した場合，約10秒後にシャットオフし，動作しなくなります。
これを避けるため，下記の方法を用いてください。

方法：
DC入力端子を使用する。（ACアダプタ（AC-L200/L200B）を使用する。）

1-2. イジェクトしない時のカセット取出し方法（強制イジェクト）

① 2. DISASSEMBLYを参照し，メカデッキを外す。
② カセコン組立を押さえながら，安定化電源より＋4.5Vをローディングモータに加え，アンローディングさせる。



1-3. 強制電源ONモードの設定

調整リモコン（RM-95またはNEW LANC JIG）を使用して，電源を入れることが出来ます。
VTR操作は調整リモコンで行えます。

1-3-1. 強制カメラ電源ONモードの設定

1) ページ：0，アドレス：01にデータ：01をセット。
2) ページ：A，アドレス：10にデータ：01をセットしPAUSE（Write）ボタンを押す。

1-3-2. 強制VTR電源ONモードの設定

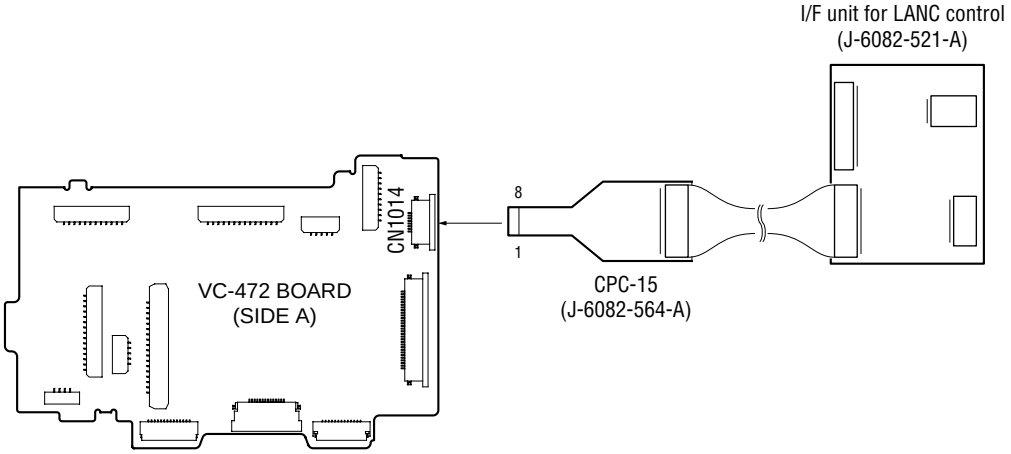
1) ページ：0，アドレス：01にデータ：01をセット。
2) ページ：A，アドレス：10にデータ：02をセットしPAUSE（Write）ボタンを押す。

1-3-3. 強制電源ONモードの解除

1) ページ：0，アドレス：01にデータ：01をセット。
2) ページ：A，アドレス：10にデータ：00をセットしPAUSE（Write）ボタンを押す。
3) ページ：0，アドレス：01にデータ：00をセット。

1-4. 使用サービス治具

CPC-15治具コネクタ（J-6082-564-A），LANC変換用I/F（J-6082-521-A）をVC-472基板CN1014に接続します。



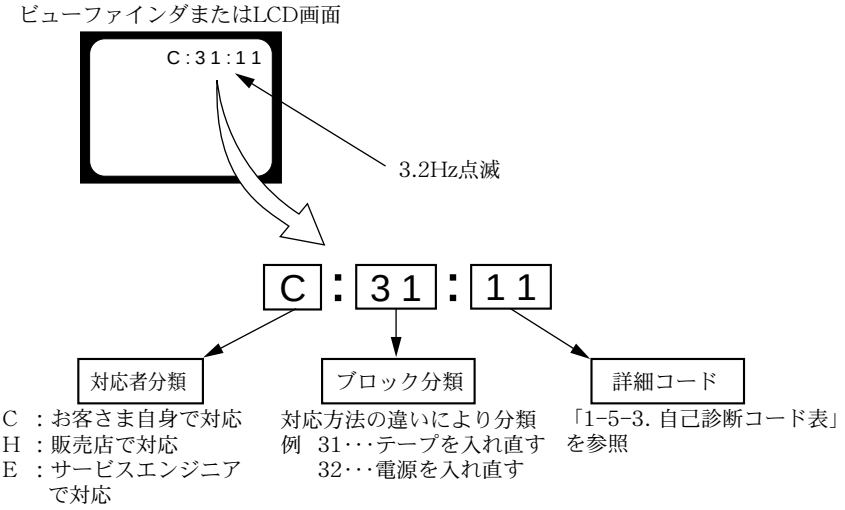
1-5. 自己診断機能

1-5-1. 自己診断機能について

本機の動作に不具合が生じたとき，自己診断機能が働き，ビューファインダまたはLCD画面に，どう処置したらよいか判断できる表示を行います。自己診断機能については取扱説明書にも掲載されています。

1-5-2. 自己診断表示

本機の動作に不具合が生じたとき，ビューファインダまたはLCD画面のカウンタ表示部分がアルファベットと数字の4桁表示になり，3.2Hzで点滅します。この5文字の表示によって対応者分類および不具合の生じたブロックの分類，不具合の詳細コードを示します。



1-5-3. 自己診断コード表

自己診断コード			症状／状態	対応／方法
対応者	ブロック機能	詳細コード		
C	0 4	0 0	標準でないバッテリを使用している	インフォリチウムバッテリを使用する
C	2 1	0 0	結露している	カセットを取り出して，約１時間してからもう一度入れ直す
C	2 2	0 0	ビデオヘッドが汚れている	別売のクリーニングカセットできれいにする
C	3 1	1 0	LOAD方向，ローディング所定時間内終了せず	テープを入れ直し，再度操作し直す
C	3 1	1 1	UNLOAD方向，ローディング所定時間内終了せず	テープを入れ直し，再度操作し直す
C	3 1	2 0	UNLOAD時，Tリール側テープ弛み	テープを入れ直し，再度操作し直す
C	3 1	2 1	UNLOAD時，Sリール側テープ弛み	テープを入れ直し，再度操作し直す
C	3 1	2 2	Tリール異常	テープを入れ直し，再度操作し直す
C	3 1	2 3	Sリール異常	テープを入れ直し，再度操作し直す
C	3 1	3 0	キャプスタン起動時FG異常	テープを入れ直し，再度操作し直す
C	3 1	3 1	キャプスタン定常時FG異常	テープを入れ直し，再度操作し直す
C	3 1	4 0	ドラム起動時FG異常	テープを入れ直し，再度操作し直す
C	3 1	4 1	ドラム起動時PG異常	テープを入れ直し，再度操作し直す
C	3 1	4 2	ドラム定常時FG異常	テープを入れ直し，再度操作し直す
C	3 1	4 3	ドラム定常時PG異常	テープを入れ直し，再度操作し直す
C	3 1	4 4	ドラム定常時位相異常	テープを入れ直し，再度操作し直す
C	3 2	1 0	LOAD方向，ローディング所定時間内終了せず	バッテリまたは電源ケーブルを外して付け直し,再度操作し直す
C	3 2	1 1	UNLOAD方向，ローディング所定時間内終了せず	バッテリまたは電源ケーブルを外して付け直し,再度操作し直す
C	3 2	2 0	UNLOAD時，Tリール側テープ弛み	バッテリまたは電源ケーブルを外して付け直し,再度操作し直す
C	3 2	2 1	UNLOAD時，Sリール側テープ弛み	バッテリまたは電源ケーブルを外して付け直し,再度操作し直す
C	3 2	2 2	Tリール異常	バッテリまたは電源ケーブルを外して付け直し,再度操作し直す
C	3 2	2 3	Sリール異常	バッテリまたは電源ケーブルを外して付け直し,再度操作し直す
C	3 2	3 0	キャプスタン起動時FG異常	バッテリまたは電源ケーブルを外して付け直し,再度操作し直す
C	3 2	3 1	キャプスタン定常時FG異常	バッテリまたは電源ケーブルを外して付け直し,再度操作し直す
C	3 2	4 0	ドラム起動時FG異常	バッテリまたは電源ケーブルを外して付け直し,再度操作し直す
C	3 2	4 1	ドラム起動時PG異常	バッテリまたは電源ケーブルを外して付け直し,再度操作し直す
C	3 2	4 2	ドラム定常時FG異常	バッテリまたは電源ケーブルを外して付け直し,再度操作し直す
C	3 2	4 3	ドラム定常時PG異常	バッテリまたは電源ケーブルを外して付け直し,再度操作し直す
C	3 2	4 4	ドラム定常時位相異常	バッテリまたは電源ケーブルを外して付け直し,再度操作し直す

自己診断コード			症状／状態	対応／方法
対応者	ブロック機能	詳細コード		
E	6 1	0 0	フォーカスが合いにくい (フォーカスの初期化ができない)	フォーカス手動モードでタッチパネルを操作した時,フォーカス動作をすればレンズブロックのフォーカスリセットセンサ(VC-472基板CN3801 ⑦ピン)を点検。フォーカス動作をしなければフォーカスモータドライブ回路(VC-472基板IC3802)を点検。
E	6 1	1 0	ズーム動作の異常(ズームレンズの初期化ができない)	ズームレバーを操作した時,ズーム動作をすればレンズブロックのズームリセットセンサ(VC-472基板CN3801 ⑪ピン)を点検。ズーム動作をしなければズームモータドライブ回路(VC-472基板IC3802)を点検。
E	6 1	1 1	フォーカスレンズ初期化異常,ズームレンズ初期化異常の同時発生	フレキシブル基板の切れ,半挿しを点検。 問題がなければフォーカス,ズームモータドライブ回路(VC-472基板IC3802)を点検。
E	6 2	0 0	手振れ補正が効きにくい (PITCH角速度センサ出力張り付き)	PITCH角速度センサ(CD-672基板SE7002)周辺回路点検
E	6 2	0 1	手振れ補正が効きにくい (YAW角速度センサ出力張り付き)	YAW角速度センサ(CD-672基板SE7001)周辺回路点検

1-6. VC-472基板交換時の注意

Exif機種データ確認

補修用基板と交換する時，補修用基板に書かれているデータは元の設定と違っている場合があります。
基板交換などでデータが変更された場合は，Exif機種データが正しいか確認し，違っている場合は正しい値に書き換えて下さい。

Exif機種データ

ページ	アドレス	データ
		DCR-HC48
C	D2	34
C	D3	38
C	D4	00

書き換え方法：

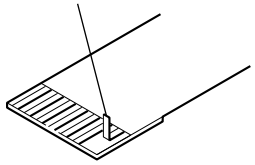
1) ページ：0，アドレス：01にデータ：01をセットする。
2) ページ：C，アドレス：D2～D4にExif機種データをセットする。
   注：不揮発性メモリ（EEPROM）に書き込むため，データをセットする度にPAUSE（Write）ボタンを押してください。
3) ページ：0，アドレス：01にデータ：00をセットする。

2. DISASSEMBLY

NOTE FOR REPAIR

- Make sure that the flat cable and flexible board are not cracked of bent at the terminal.
  Do not insert the cable insufficiently nor crookedly.
- When remove a connector, don't pull at wire of connector. It is possible that a wire is snapped.
- When installing a connector, don't press down at wire of connector.
  It is possible that a wire is snapped.

Cut and remove the part of gilt which comes off at the point. (Be careful or some pieces of gilt may be left inside)



2-1. DISASSEMBLY

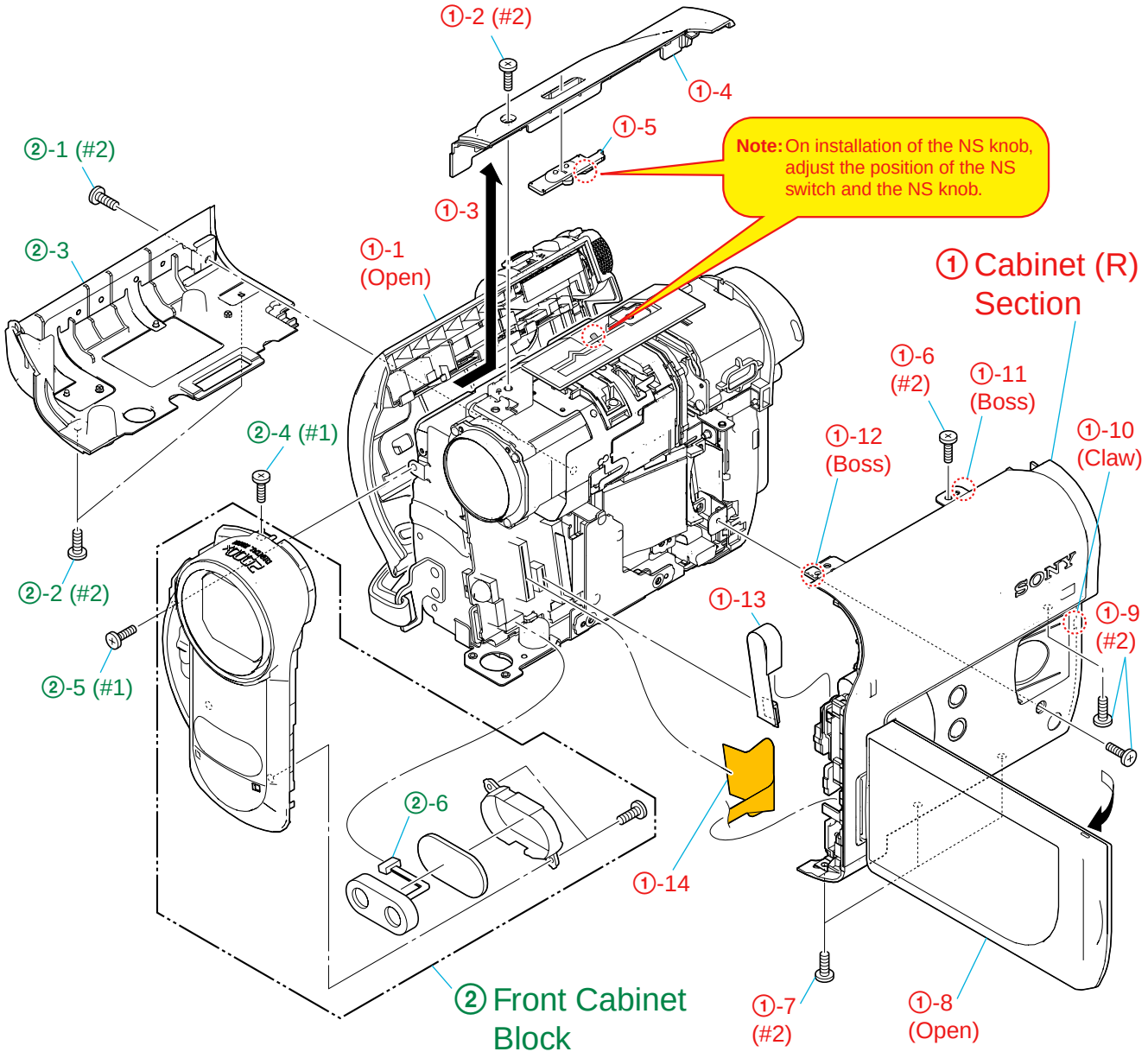
EXPLODED VIEW HARDWARE LIST

2-1-1. OVERALL SECTION

Follow the disassembly in the numerical order given.

① Cabinet (R) Section (①-1 to ①-14)

② Front Cabinet Block (②-1 to ②-6)

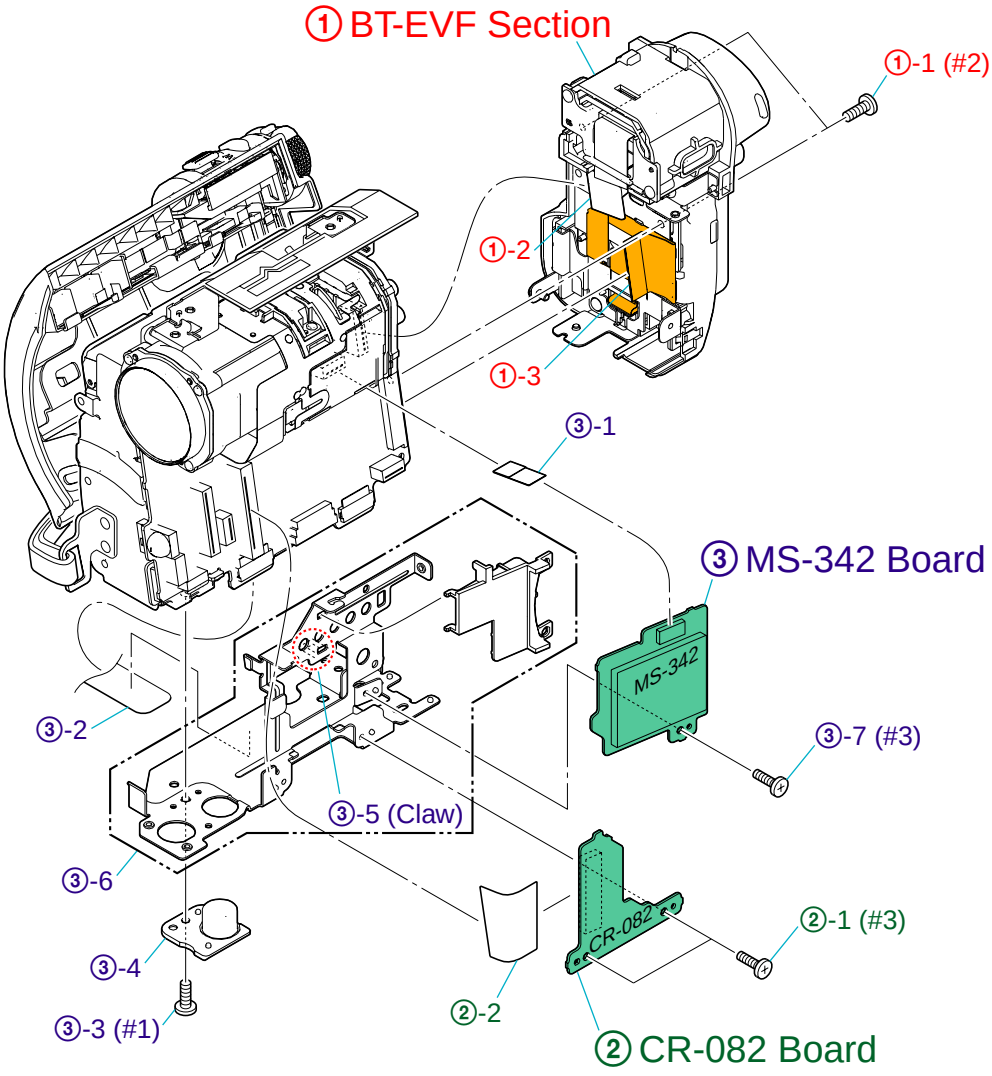


2-1-2. BOTTOM FRAME SECTION

EXPLODED VIEW HARDWARE LIST

Follow the disassembly in the numerical order given.

① BT-EVF Section (①-1 to ①-3)
② CR-082 Board (②-1 to ②-2)
③ MS-342 Board (③-1 to ③-7)

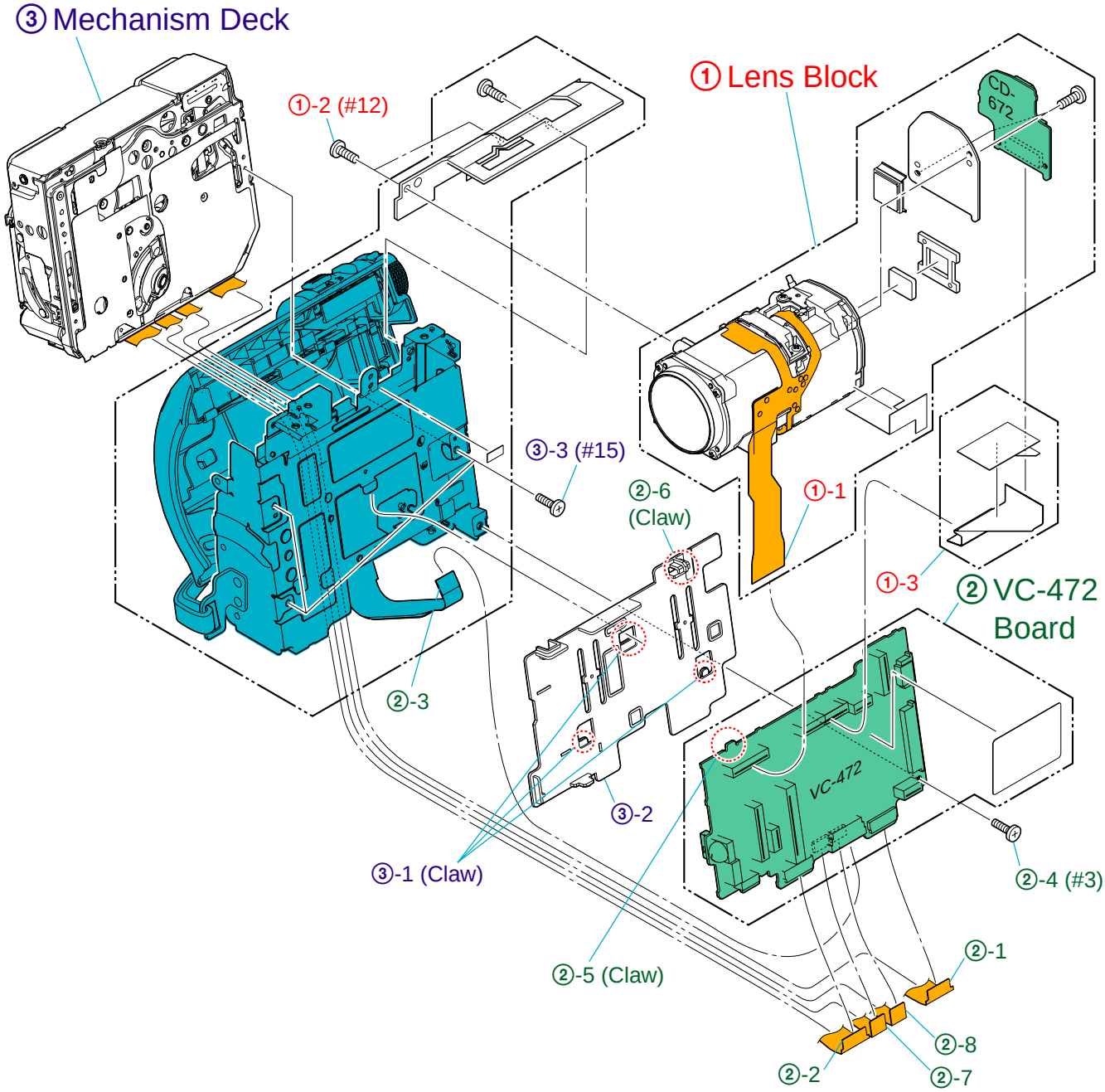


2-1-3. CABINET (L) SECTION

EXPLODED VIEW HARDWARE LIST

Follow the disassembly in the numerical order given.

① Lens Block (①-1 to ①-3)
② VC-472 Board (②-1 to ②-8)
③ Mechanism Deck (③-1 to ③-3)



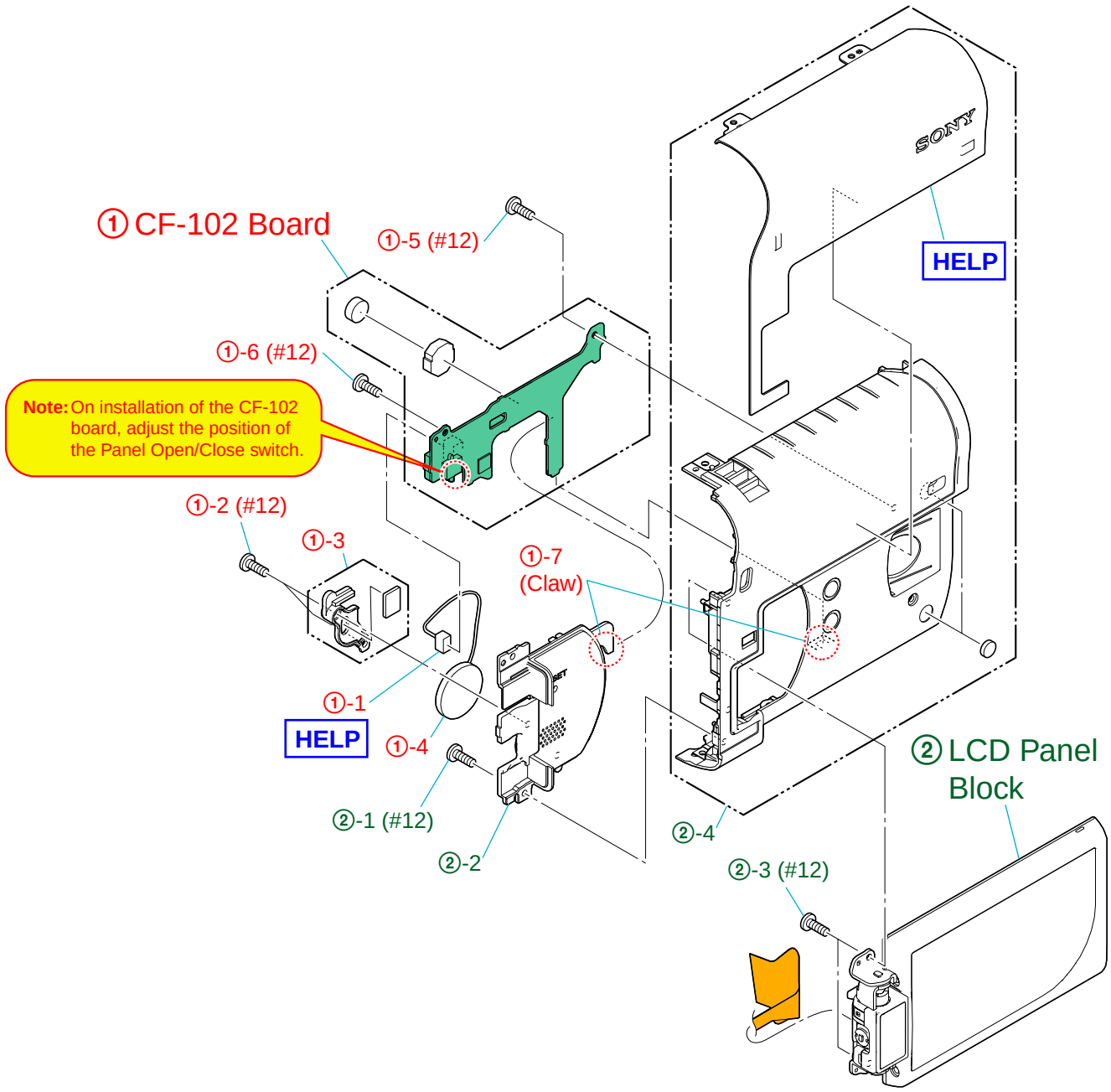
2-1-4. CABINET (R) SECTION

Follow the disassembly in the numerical order given.

① CF-102 Board (①-1 to ①-7)

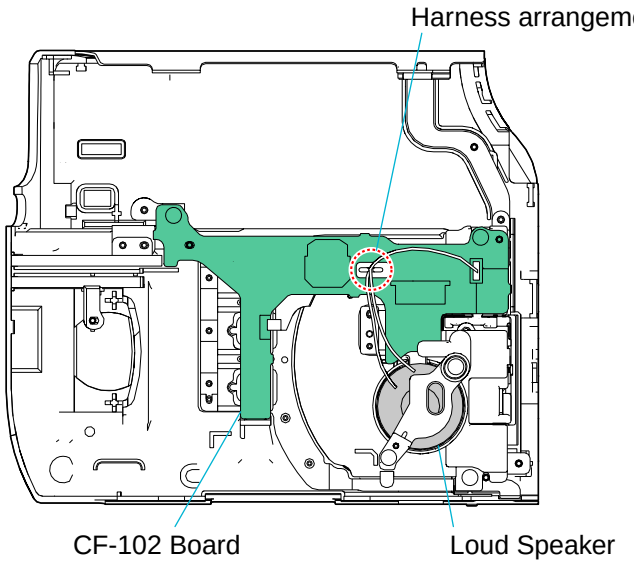
② LCD Panel Block (②-1 to ②-4)

EXPLODED VIEW HARDWARE LIST



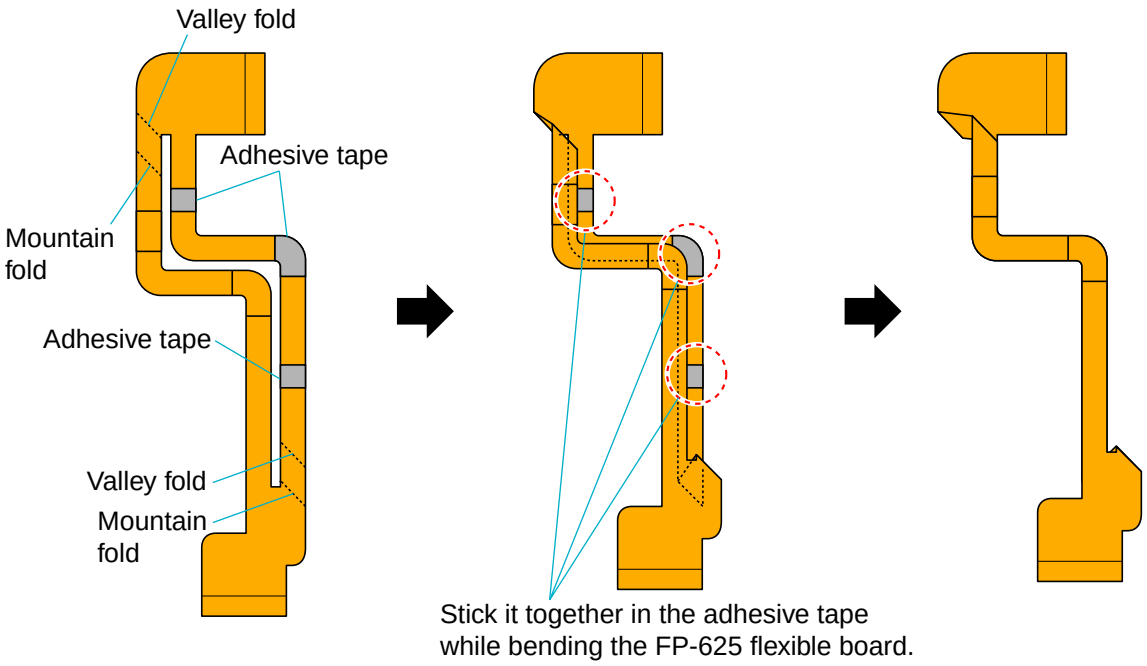
HELP

Sheet attachment positions and procedures of processing the flexible boards/harnesses are shown.

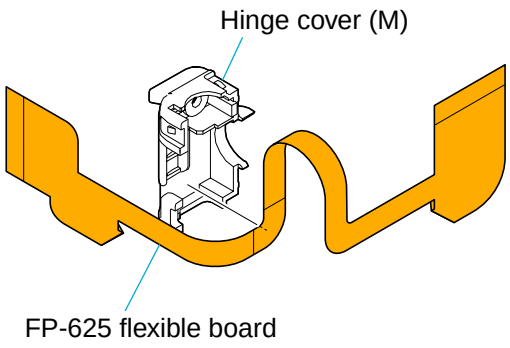


THE METHOD OF ATTACHMENT OF FP-625 FLEXIBLE BOARD

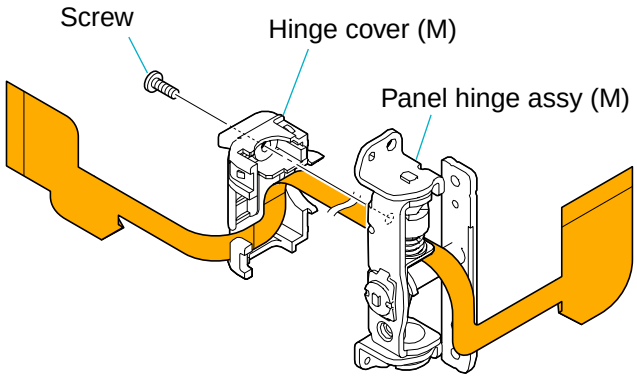
① Fold dotted line parts of the FP-625 flexible board as shown in figure.



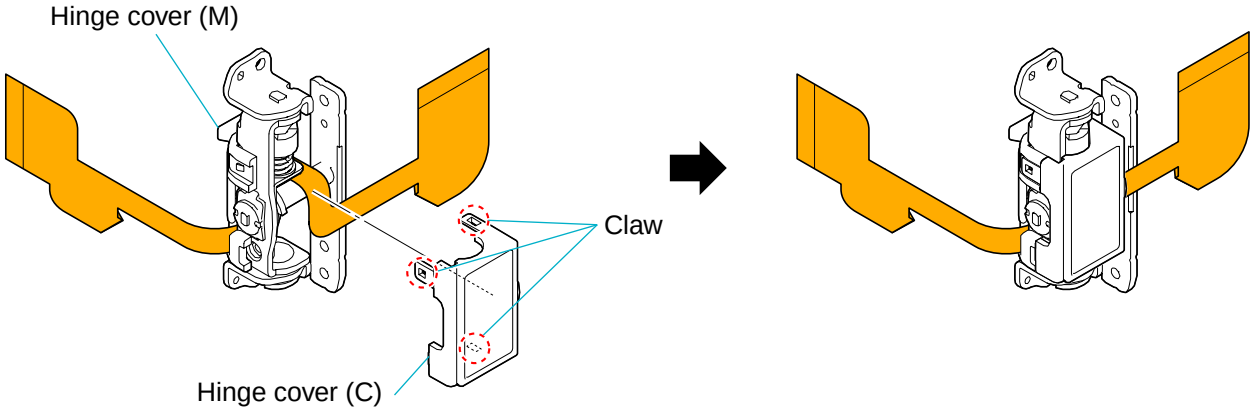
② Put the FP-625 flexible board on the hinge cover (M).



③ Fix hinge cover (M) and the panel hinge assy (M) with the screw.



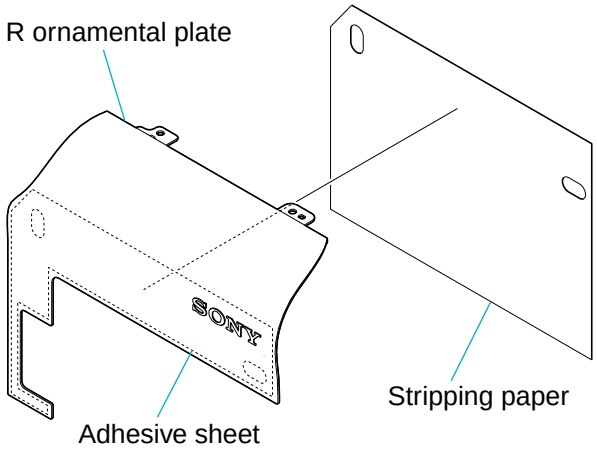
④ Install the hinge cover (C) in the hinge cover (M).



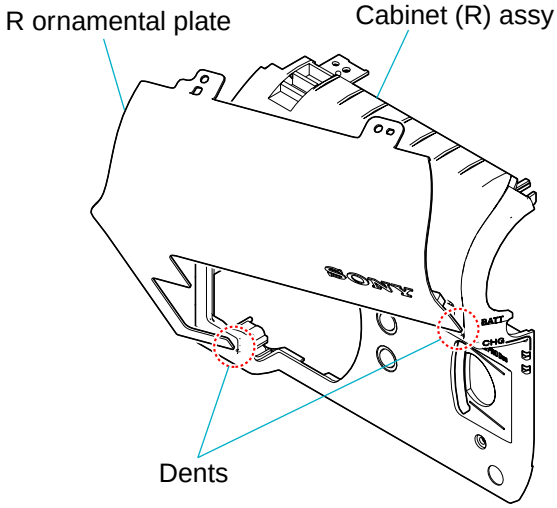
STICKING PROCEDURE OF R ORNAMENTAL PLATE

CAUTION
Do not drop because it is easy to bend in the R ornamental plate.

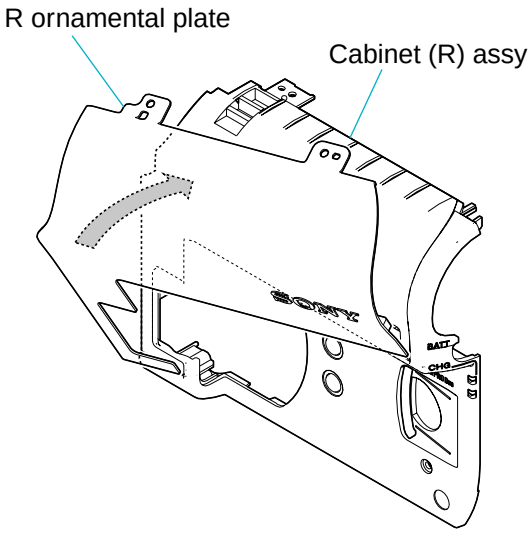
① Peel off the stripping paper stuck on the adhesive sheet on the R ornamental plate.



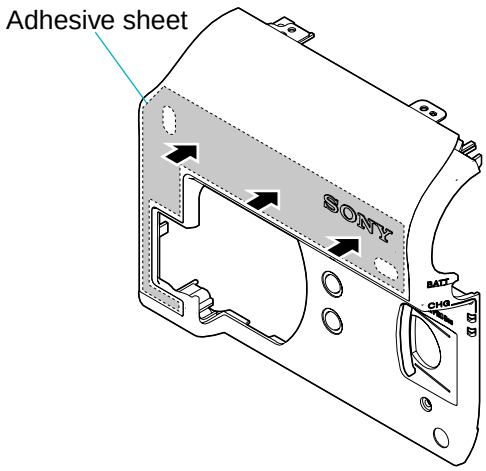
② Place two corners of the R ornamental plate in contact with the dents of the cabinet (R) assy.



③ On the basis of the dents, stick the R ornamental plate on the cabinet (R) assy.



④ Press strongly the adhesive sheet so as to settle the R ornamental plate firmly.



3. BLOCK DIAGRAMS

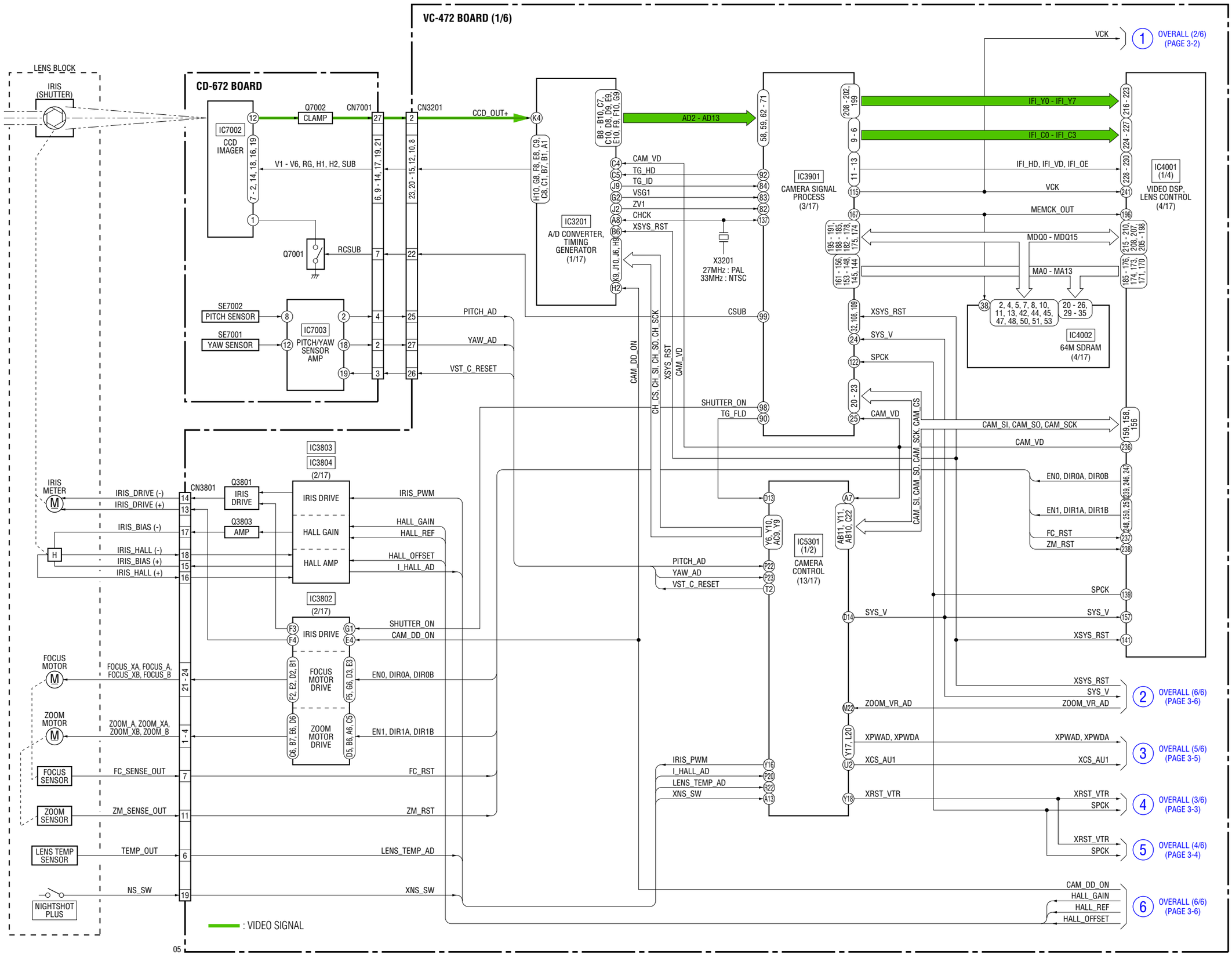
Link

- OVERALL BLOCK DIAGRAM (1/6)
- OVERALL BLOCK DIAGRAM (2/6)
- OVERALL BLOCK DIAGRAM (3/6)
- OVERALL BLOCK DIAGRAM (4/6)
- OVERALL BLOCK DIAGRAM (5/6)
- OVERALL BLOCK DIAGRAM (6/6)
- POWER BLOCK DIAGRAM (1/3)
- POWER BLOCK DIAGRAM (2/3)
- POWER BLOCK DIAGRAM (3/3)

3. BLOCK DIAGRAMS

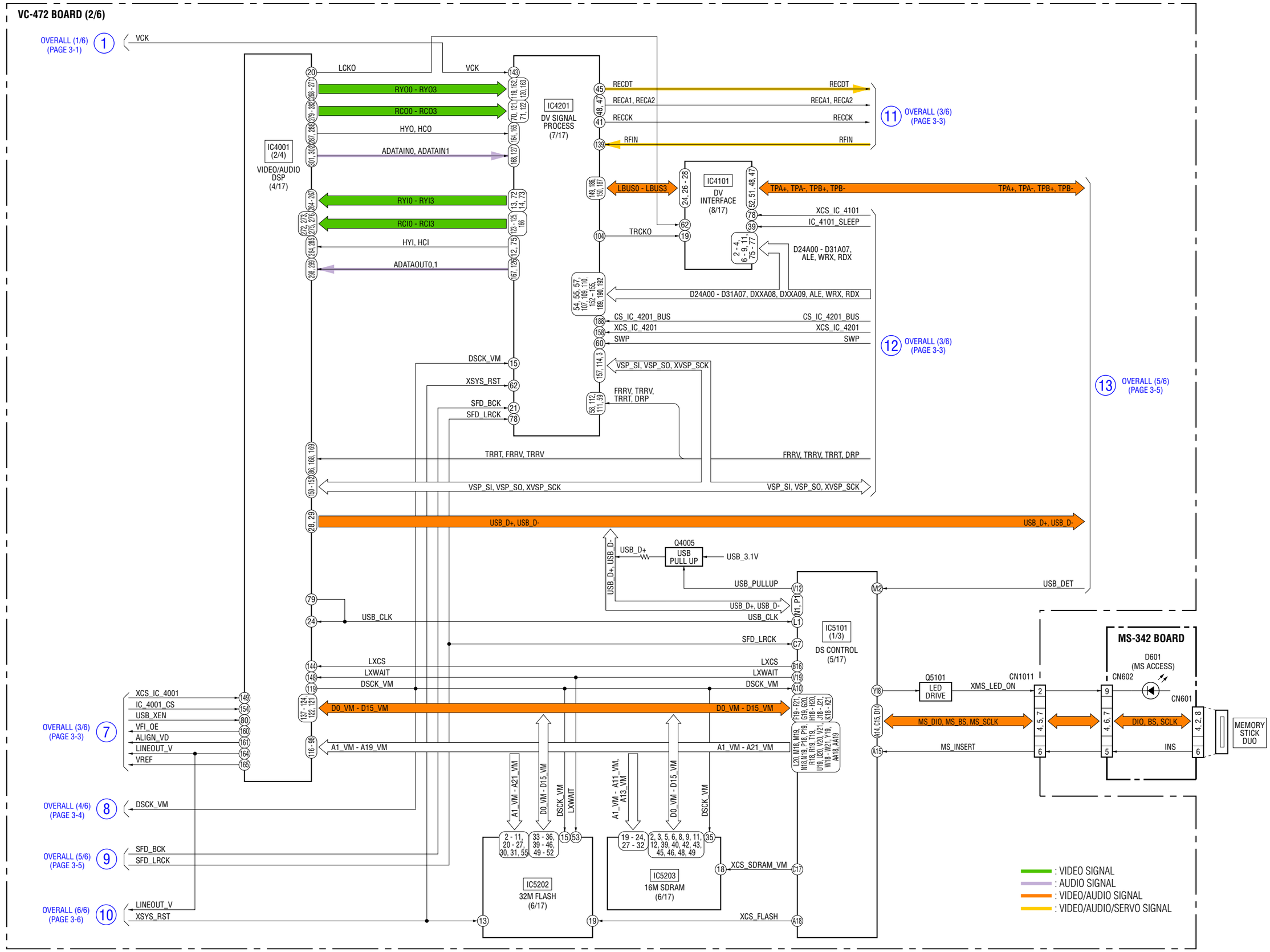
3-1. OVERALL BLOCK DIAGRAM (1/6)

( ) : Number in parenthesis ( ) indicates the division number of schematic diagram where the component is located.



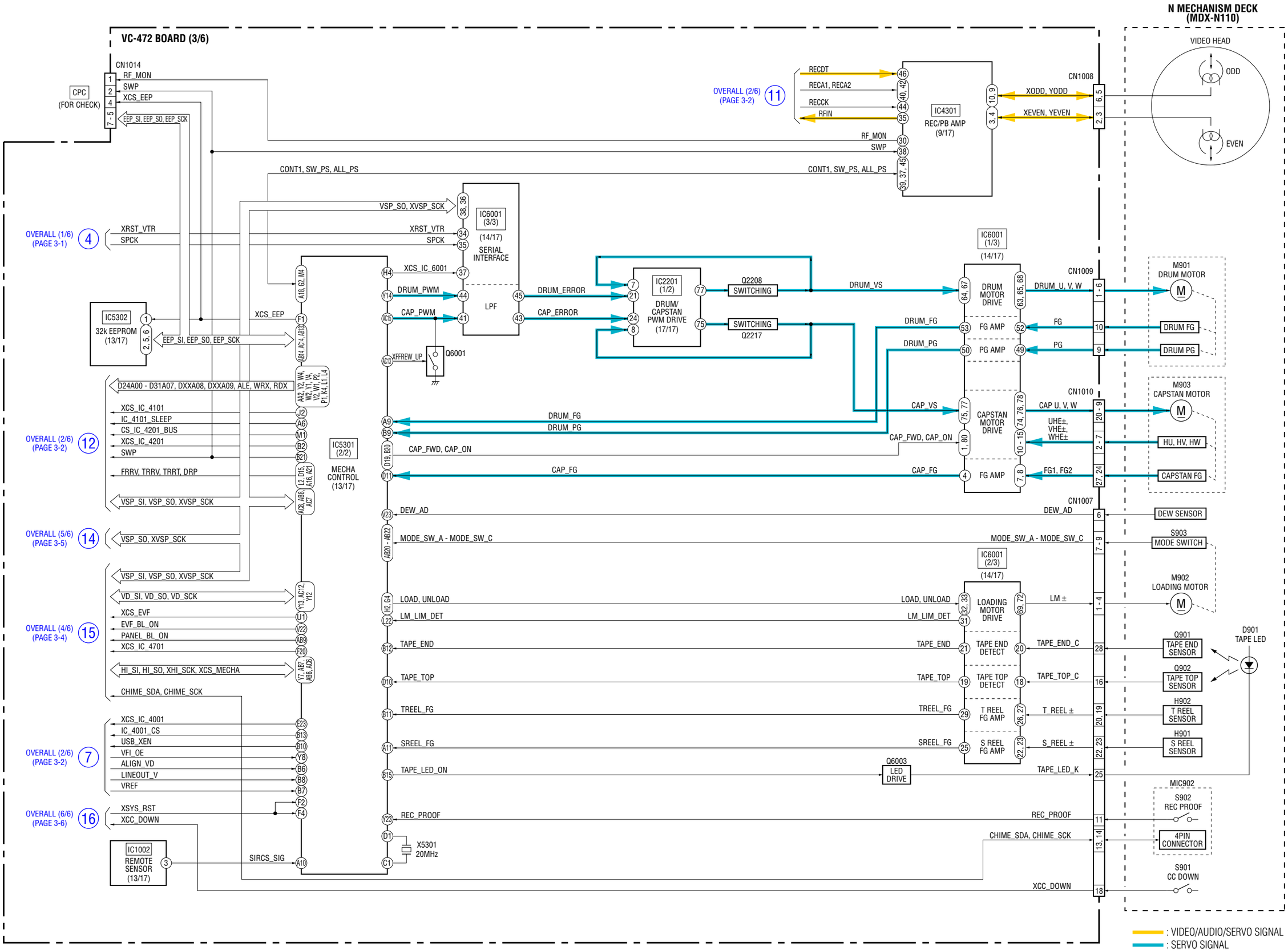
3-2. OVERALL BLOCK DIAGRAM (2/6)

( ) : Number in parenthesis ( ) indicates the division number of schematic diagram where the component is located.



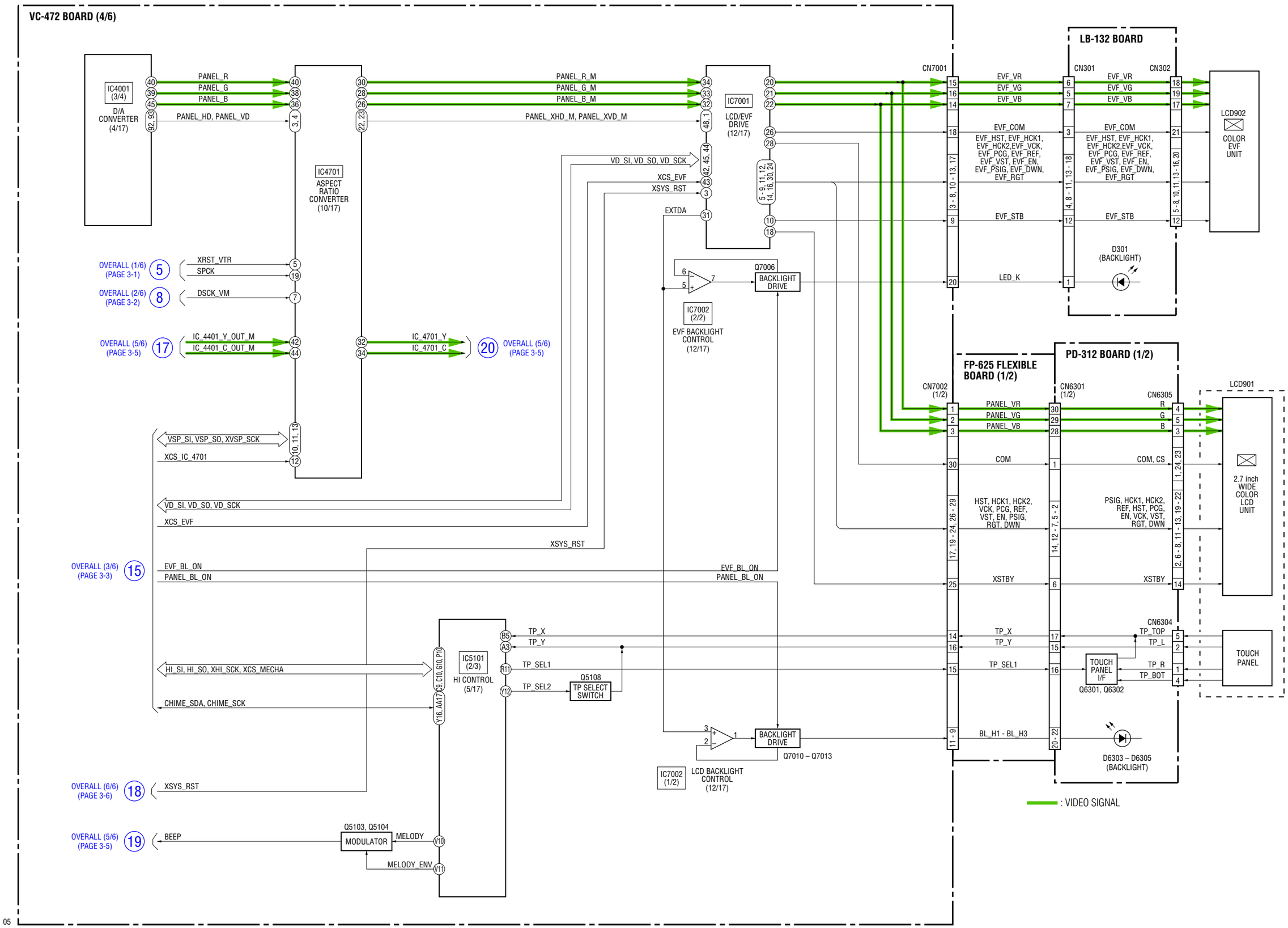
3-3. OVERALL BLOCK DIAGRAM (3/6)

( ) : Number in parenthesis ( ) indicates the division number of schematic diagram where the component is located.



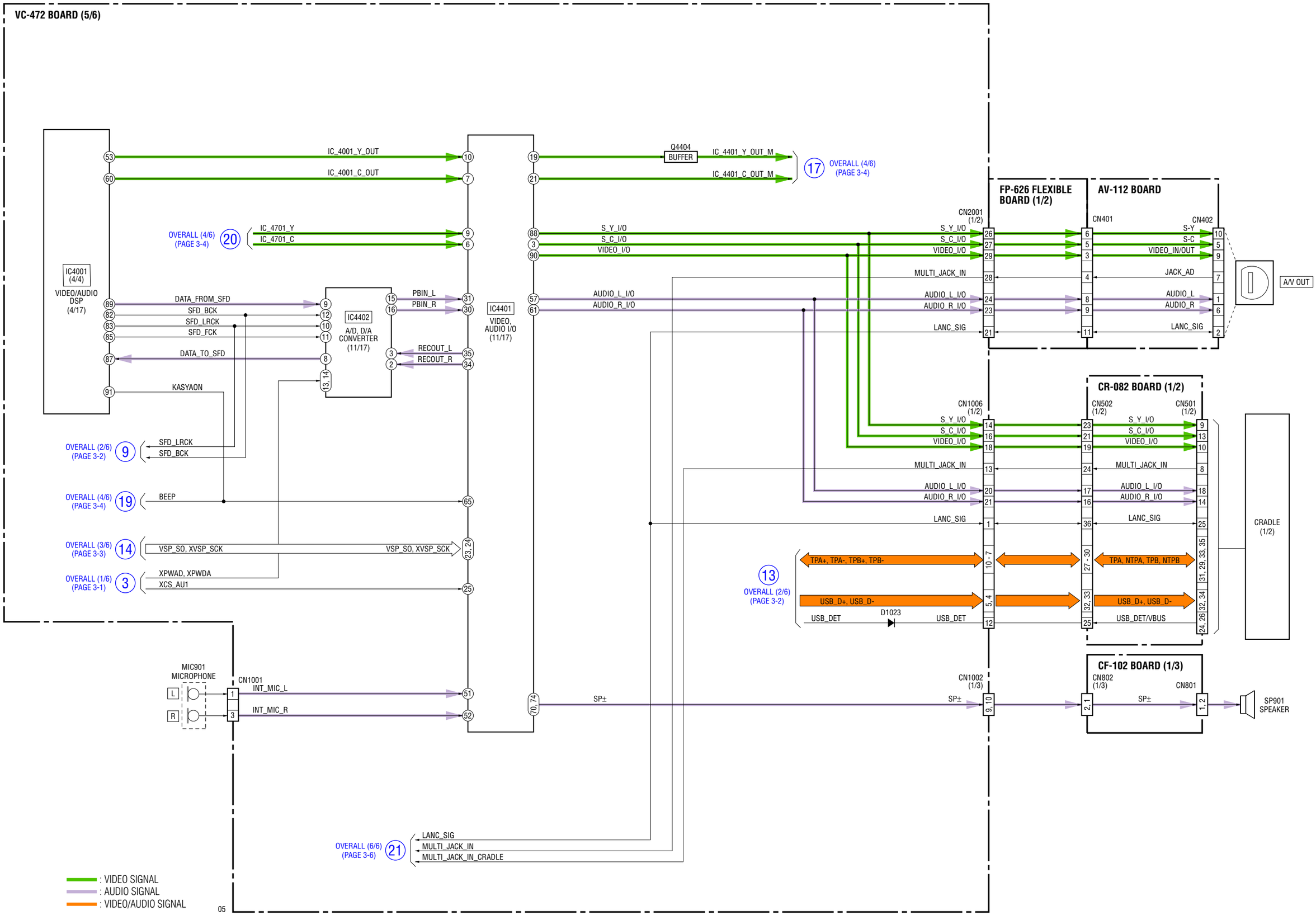
3-4. OVERALL BLOCK DIAGRAM (4/6)

( ) : Number in parenthesis ( ) indicates the division number of schematic diagram where the component is located.



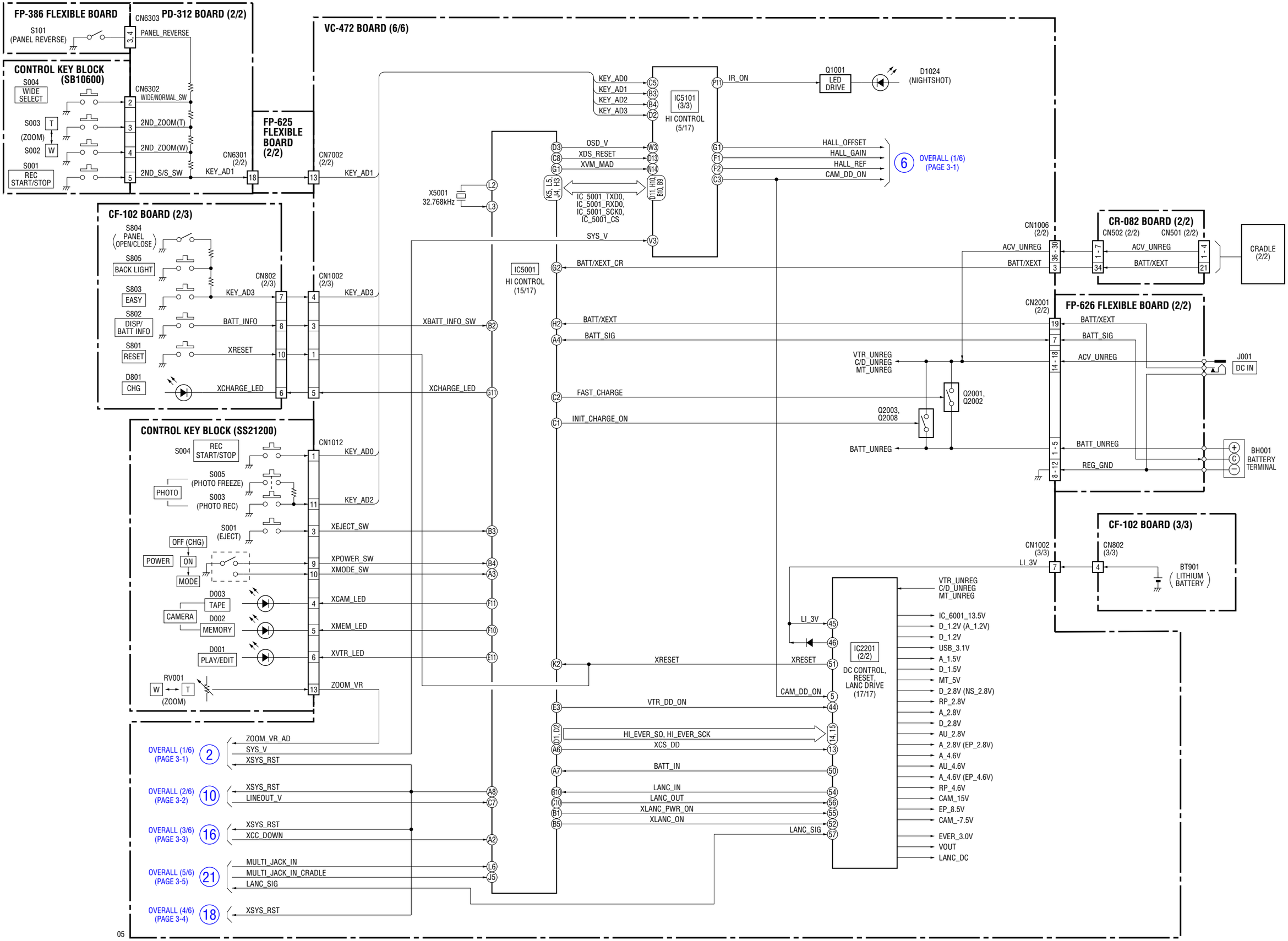
3-5. OVERALL BLOCK DIAGRAM (5/6)

( ) : Number in parenthesis ( ) indicates the division number of schematic diagram where the component is located.



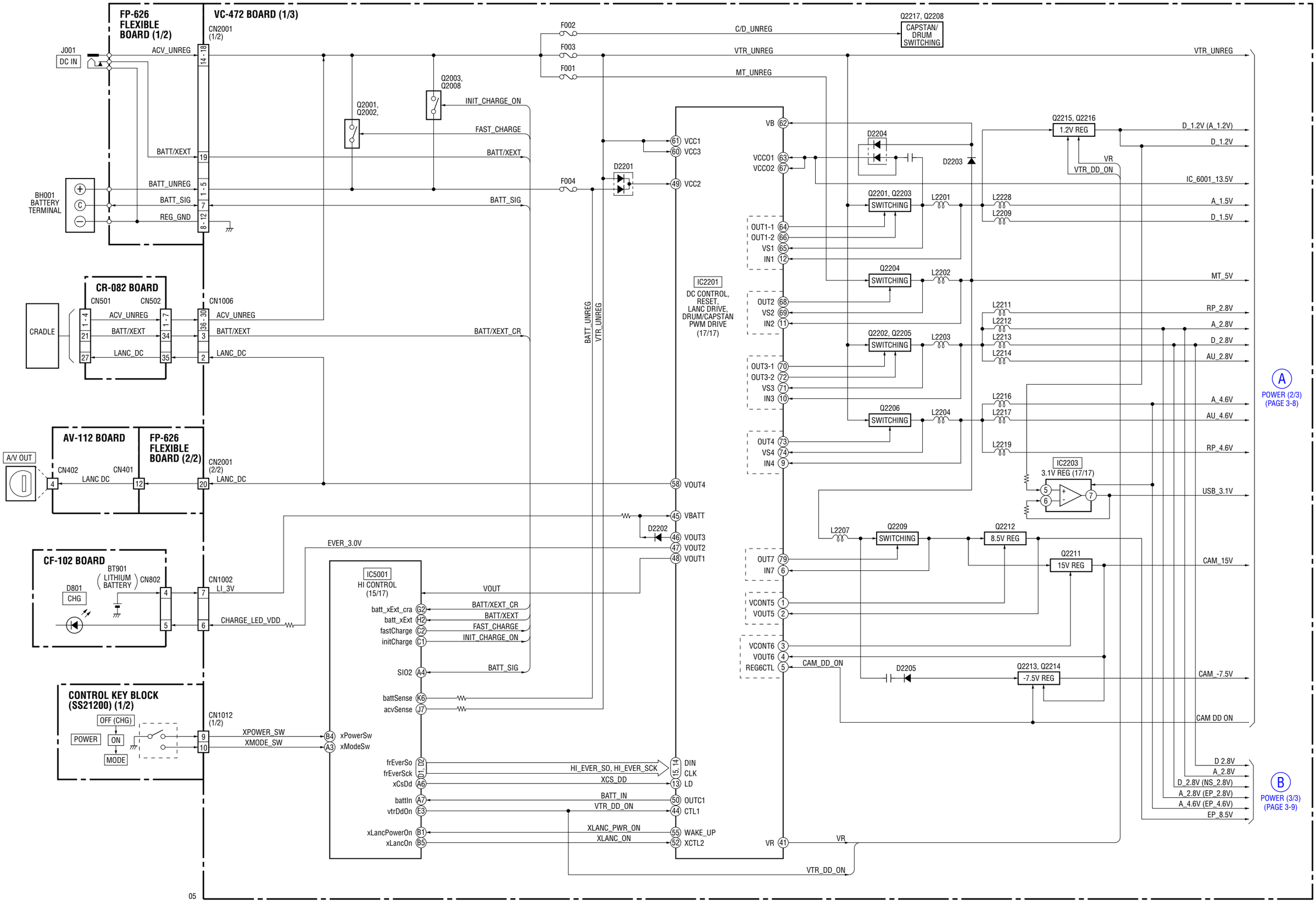
3-6. OVERALL BLOCK DIAGRAM (6/6)

( ) : Number in parenthesis ( ) indicates the division number of schematic diagram where the component is located.



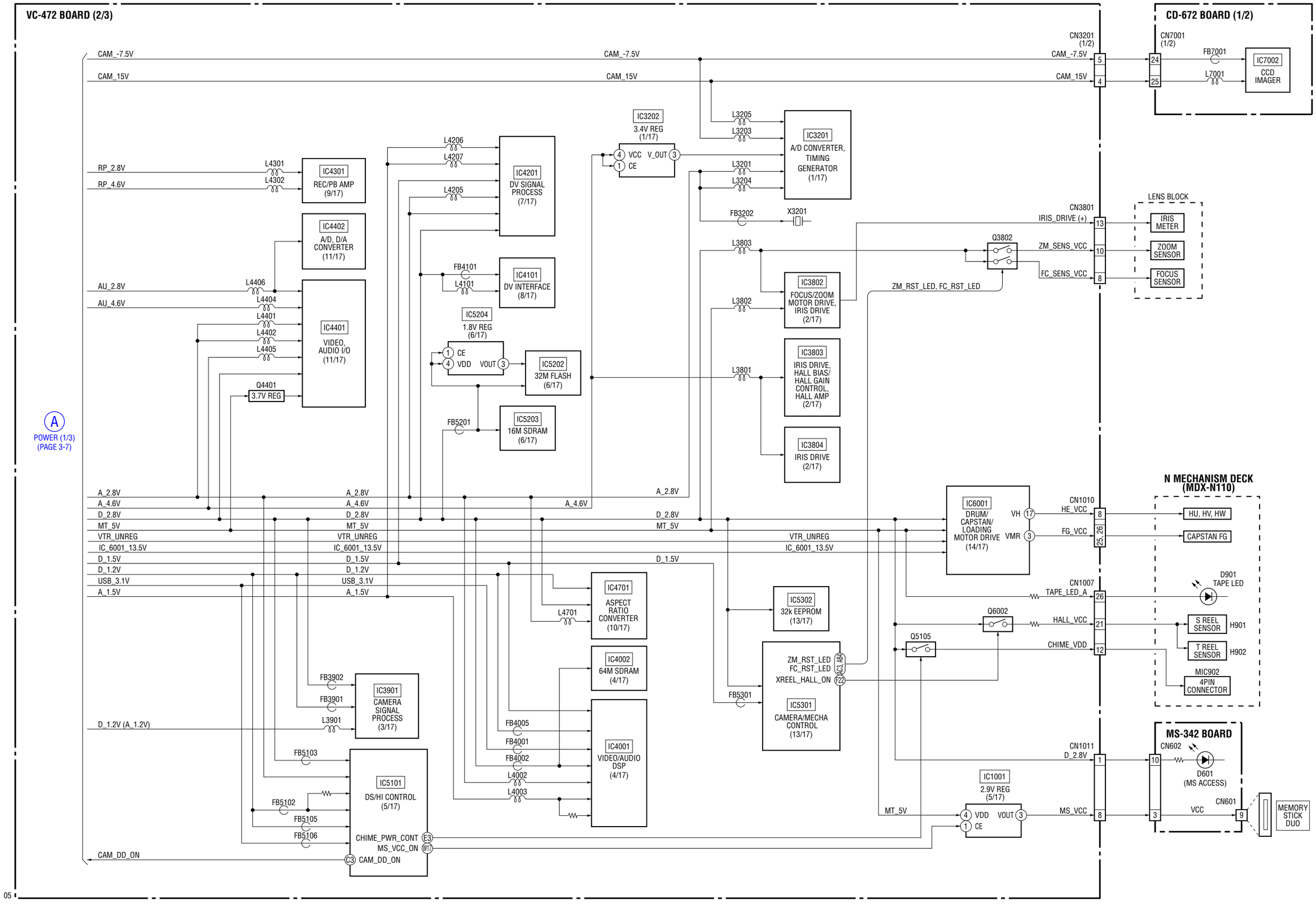
3-7. POWER BLOCK DIAGRAM (1/3)

( ) : Number in parenthesis ( ) indicates the division number of schematic diagram where the component is located.



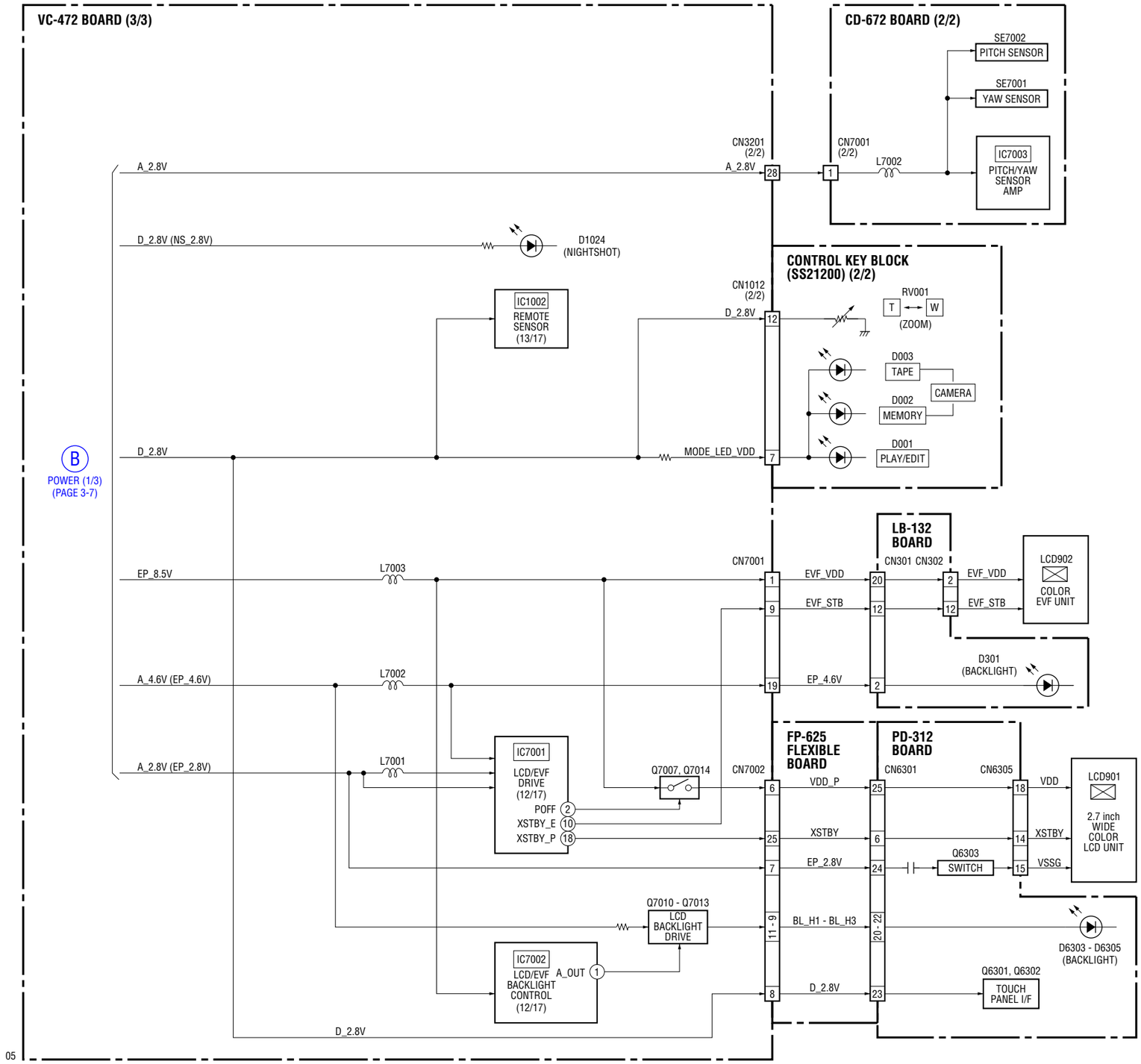
3-8. POWER BLOCK DIAGRAM (2/3)

( ) : Number in parenthesis ( ) indicates the division number of schematic diagram where the component is located.



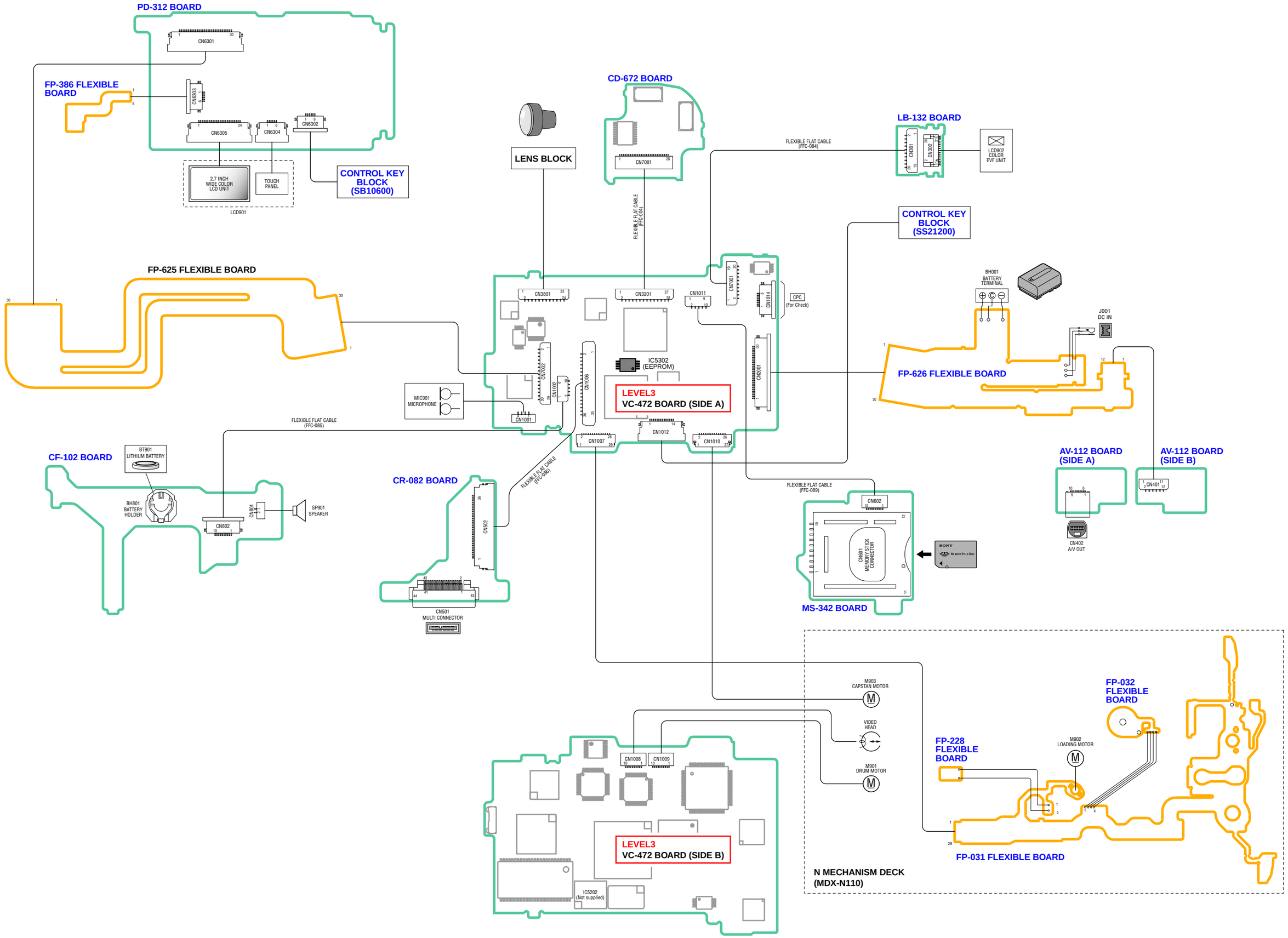
3-9. POWER BLOCK DIAGRAM (3/3)

( ) : Number in parenthesis ( ) indicates the division number of schematic diagram where the component is located.



4. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

4-1. FRAME SCHEMATIC DIAGRAM



4-2. SCHEMATIC DIAGRAMS

Link

- CD-672 BOARD (CCD IMAGER)
- AV-112 BOARD (AV CONNECTOR)
- PD-312 BOARD (LCD, LCD BACKLIGHT)
- MS-342 BOARD (MS CONNECTOR)
- FP-386 FLEXIBLE BOARD (PANEL REVERSE DETECT)
- LB-132 BOARD (EVF, EVF BACKLIGHT)
- FP-625 FLEXIBLE BOARD
- CF-102 BOARD (CONTROL SWITCH)
- CONTROL KEY BLOCK (SB10600)
- CONTROL KEY BLOCK (SS21200)
- CR-082 BOARD (DRADLE TERMINAL)
- FP-031, FP-032, FP-228 FLEXIBLE BOARD
- FP-626 FLEXIBLE BOARD (DC IN)
- COMMON NOTE FOR SCHEMATIC DIAGRAMS

4-2. SCHEMATIC DIAGRAMS (ENGLISH)

THIS NOTE IS COMMON FOR SCHEMATIC DIAGRAMS
(In addition to this, the necessary note is printed in each block)

(For schematic diagrams)

- All capacitors are in µF unless otherwise noted. pF : µµF. 50 V or less are not indicated except for electrolytics and tantalums.
- Chip resistors are 1/10 W unless otherwise noted. kΩ=1000 Ω, MΩ=1000 kΩ.
- Caution when replacing chip parts.
  New parts must be attached after removal of chip.
  Be careful not to heat the minus side of tantalum capacitor, Because it is damaged by the heat.
- Some chip part will be indicated as follows.

  Example C541 22U TA A — Kinds of capacitor / Case size
  L452 10UH 2520 — External dimensions (mm)
- Constants of resistors, capacitors, ICs and etc with XX indicate that they are not used.
  In such cases, the unused circuits may be indicated.
- Parts with ★ differ according to the model/destination.
  Refer to the mount table for each function.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- Signal name
  XEDIT → $\overline{\text{EDIT}}$ PB/XREC → PB/$\overline{\text{REC}}$
- : non flammable resistor
- : fusible resistor
- : panel designation
- : B+ Line
- : B– Line
- : IN/OUT direction of (+,–) B LINE.
- : adjustment for repair.
- : not use circuit

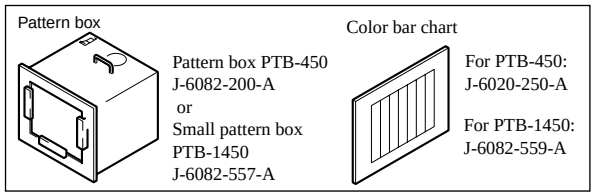
(Measuring conditions voltage and waveform)

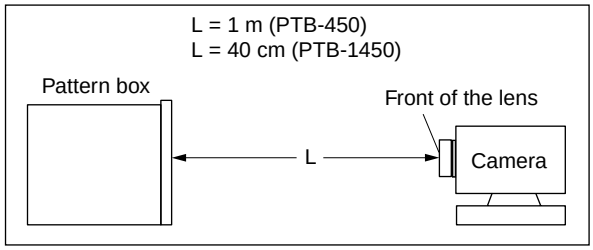
- Voltages and waveforms are measured between the measurement points and ground when camera shoots color bar chart of pattern box. They are reference values and reference waveforms.
  (VOM of DC 10 MΩ input impedance is used)
- Voltage values change depending upon input impedance of VOM used.)

Precautions for Replacement of Imager

- If the imager has been replaced, carry out all the adjustments for the camera section.
- As the imager may be damaged by static electricity from its structure, handle it carefully like for the MOS IC.
  In addition, ensure that the receiver is not covered with dusts nor exposed to strong light.

1. Connection





2. Adjust the distance so that the output waveform of Fig. a and the Fig. b can be obtain.

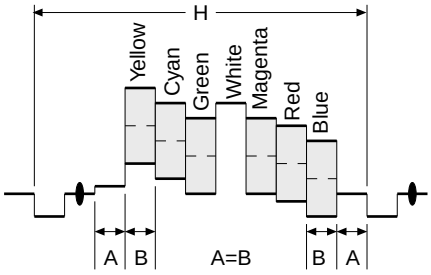


Fig. a (Video output terminal output waveform)

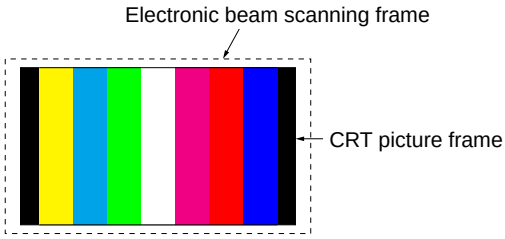


Fig.b (Picture on monitor TV)

When indicating parts by reference number, please include the board name.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifie.

(JAPANESE)

回路図共通ノート
（他に必要なノートは各ブロックに記載してあります）

【回路図ノート】

・ケミコン，タンタルを除くコンデンサで，耐圧50V以下のものはその耐圧を省略。単位はすべてμF（pはpF）。
・チップ抵抗で指示のないものは，1／10W以下。
kΩ＝1000Ω，MΩ＝1000kΩ
・チップ部品交換時の注意
取り外した部品は再使用せず，未使用の部品をご使用ください。
タンタルコンデンサのマイナス側は熱に弱いため注意してください。
・チップ部品には下記のように表示したものがあります。

例	C 541	L 452
	22U	10UH
	TA A	2520
	↑ ↑	↑
	種類 ケースサイズ	外形寸法（mm）

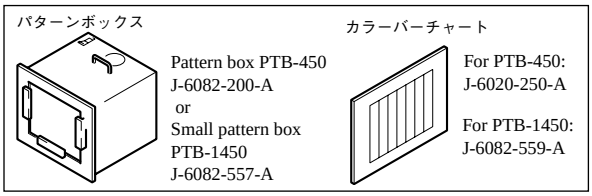
・抵抗，コンデンサ，ICなど定数にXXがあるものは，使用していない事を示しています。このため，使用していない回路が記載されている事があります。
・★印のある部品は，機種などにより異なりますので機能別マウント一覧表を参照してください。
・可変抵抗と半固定抵抗で，B特性の表示を省略。
・信号名表記について，下記のような場合があります。
XEDIT → $\overline{\text{EDIT}}$　　PB/XREC → PB/$\overline{\text{REC}}$
・ は不燃性抵抗。
・はヒューズ抵抗。
・ はパネル表示名称。
・はB＋ライン。
・はB－ライン。
・ はBライン（＋，－）の入出力方向を示す。
・ は調整名称。
・ は未使用回路。

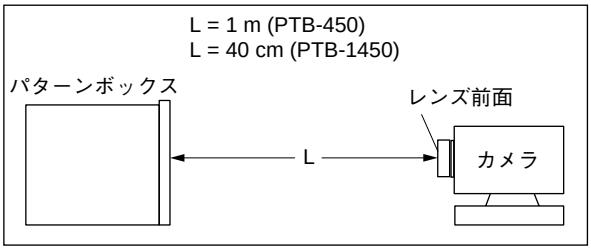
【電圧・波形測定条件ノート】

・電圧値及び信号波形はパターンボックスのカラーバーチャートを被写体としたときの測定点対アース間の参考値。
（デジタルマルチメータ；入力インピーダンス　DC10MΩ使用）
・使用テスタの入力インピーダンスにより電圧値が多少異なります。

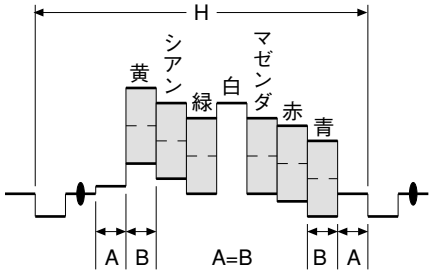
イメージャ交換時の注意
・イメージャを交換した場合は，カメラ部の全調整を行ってください。
・イメージャは構造上，静電気により破壊される恐れがあるため，MOS ICと同様に注意して取り扱ってください。
また，受光部にはゴミの付着，および強い光がはいることのないように注意してください。

1. 接続図

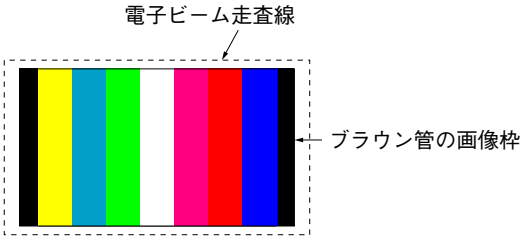




2. 図a及び図bの波形が得られるように画枠調整して下さい。



図a（映像入出力端子出力波形）



図b（テレビモニタの映像）

⚠印の部品，または⚠印付きの点線で囲まれた部品は，安全性を維持するために重要な部品です。
従って交換時は，必ず指定の部品を使用して下さい。

お願い
図面番号で部品を指定するときは基板名又はブロックを併せて指定して下さい。

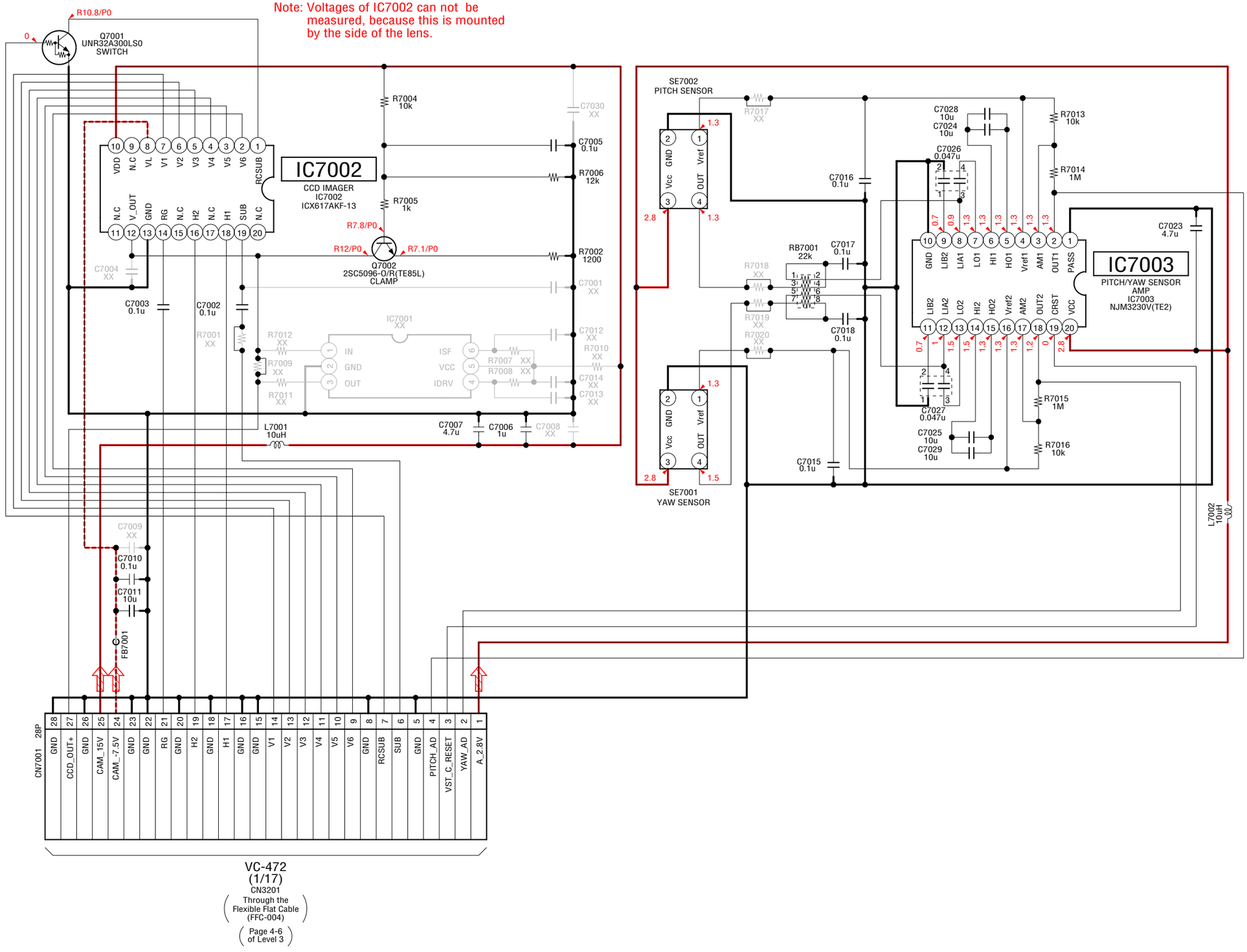
CD-672 BOARD

CCD IMAGER

XX MARK:NO MOUNT
NO MARK:REC/PB MODE
R:REC MODE
P:PB MODE

Note: IC7002 is not supplied, but this is included in CCD block assy.

Note: Voltages of IC7002 can not be measured, because this is mounted by the side of the lens.



Schematic diagrams of the VC-472 board are not shown.
Pages from 4-6 to 4-22 are not shown.

FP-625 FLEXIBLE BOARD

(PRINTED WIRING BOARD is omitted.)

PD-312 BOARD

LCD, LCD BACKLIGHT

XX MARK:NO MOUNT

NO MARK:REC/PB MODE

VC-472 (12/17)
CN7002
(Page 4-17 of Level 3)

LND001	PANEL_VR 1	30 PANEL_VR	LND101	CN6301 30P PANEL_VR	30
LND002	PANEL_VG 2	29 PANEL_VG	LND102	PANEL_VG	29
LND003	PANEL_VB 3	28 PANEL_VB	LND103	PANEL_VB	28
LND004	REG_GND 4	27 REG_GND	LND104	REG_GND	27
LND005	REG_GND 5	26 REG_GND	LND105	REG_GND	26
LND006	VDD_P 6	25 VDD_P	LND106	VDD_P	25
LND007	EP_2.8V 7	24 EP_2.8V	LND107	EP_2.8V	24
LND008	D_2.8V 8	23 D_2.8V	LND108	D_2.8V	23
LND009	BL_H3 9	22 BL_H3	LND109	BL_H3	22
LND010	BL_H2 10	21 BL_H2	LND110	BL_H2	21
LND011	BL_H1 11	20 BL_H1	LND111	BL_H1	20
LND012	REG_GND 12	19 REG_GND	LND112	REG_GND	19
LND013	KEY_AD1 13	18 KEY_AD1	LND113	KEY_AD1	18
LND014	TP_X 14	17 TP_X	LND114	TP_X	17
LND015	TP_SEL1 15	16 TP_SEL1	LND115	TP_SEL1	16
LND016	TP_Y 16	15 TP_Y	LND116	TP_Y	15
LND017	REF 17	14 REF	LND117	REF	14
LND018	REG_GND 18	13 REG_GND	LND118	REG_GND	13
LND019	HCK1 19	12 HCK1	LND119	HCK1	12
LND020	HCK2 20	11 HCK2	LND120	HCK2	11
LND021	HST 21	10 HST	LND121	HST	10
LND022	PCG 22	9 PCG	LND122	PCG	9
LND023	EN 23	8 EN	LND123	EN	8
LND024	PSIG 24	7 PSIG	LND124	PSIG	7
LND025	XSTBY 25	6 XSTBY	LND125	XSTBY	6
LND026	DWN 26	5 DWN	LND126	DWN	5
LND027	RGT 27	4 RGT	LND127	RGT	4
LND028	VST 28	3 VST	LND128	VST	3
LND029	VCK 29	2 VCK	LND129	VCK	2
LND030	COM 30	1 COM	LND130	COM	1

VR_P, VG_P, VB_P

C6301 XX, R6316 XX

R6315 XX, R6314 XX, R6331 XX, R6330 XX, R6329 XX

REF_P, HCK1_P, HCK2_P, HST_P, PCG_P, EN_P, VP_P, XSTBY_P, DWN_P, RGT_P, VST_P, VCK_P, COM_P

R6313 XX

LND632 NOR_REV

LND633 GND

D6310 XX

CN6302 6P

REG_GND	6
2ND_S/S_SW	5
2ND_ZOOM(W)	4
2ND_ZOOM(T)	3
WIDE/NORMAL_SW	2
REG_GND	1

R6327 XX, R6301 XX, R6302 1500, R6303 2200, R6304 3300, R6305 4700, R6328 XX, D6301 XX

CN6303 6P

REG_GND	1
N.C	2
PANEL_REVERSE	3
PANEL_REVERSE	4
N.C	5
REG_GND	6

CN6304 6P

TP_R	1
TP_L	2
N.C.	3
TP_BOT	4
TP_TOP	5
N.C.	6

LCD901 (2/2) TOUCH PANEL (with LCD UNIT)

VD6301, VD6302, VD6303, VD6304

C6302 4700p, C6303 4700p

CL6301, CL6302, CL6303, CL6304

D6303-D6305 (BACKLIGHT)

D6303 NSSW008CT-T071, D6304 NSSW008CT-T071, D6305 NSSW008CT-T071

D6306 XX, D6307 XX, D6308 XX

Q6302 XP411F-TXE

Q6301, Q6302 TOUCH PANEL I/F

Q6301 XP421F-TXE

LND631 CH_GND, R6326 XX

CN6305 24P

COM	24
CS	23
VST	22
VCK	21
EN	20
DWN	19
VDD	18
VSS	17
N.C.	16
VSSG	15
XSTBY	14
PCG	13
HST	12
REF	11
TEST1	10
N.C.	9
HCK2	8
HCK1	7
PSIG	6
G	5
R	4
B	3
RGT	2
COM	1

VST_P, VCK_P, EN_P, DWN_P, XSTBY_P, PCG_P, HST_P, REF_P, HCK2_P, HCK1_P, VP_P, VG_P, VR_P, VB_P, RGT_P, COM_P

C6304 1u, R6307 120k, D6303 2SA2078001S0 SWITCH, C6305 1u, D6302 MA2S056(0)0SG, R6308 1k, C6306 0.1u

LCD901 (1/2) 2.7inch wide COLOR LCD UNIT (with TOUCH PANEL)

CONTROL KEY BLOCK (SB10600)

CONTROL KEY BLOCK (SB10600) is replaced as block, so that PRINTED WIRING BOARD is omitted.

6	REG_GND	LND006	
5	2ND_S/S_SW	LND005	S001 REC START/STOP
4	2ND_ZOOM(W)	LND004	S002 W (ZOOM)
3	2ND_ZOOM(T)	LND003	S003 T
2	WIDE/NORMAL_SW	LND002	S004 WIDE SELECT
1	REG_GND	LND001	

FP-386 FLEXIBLE BOARD

PANEL REVERSE DETECT

S101 (PANEL REVERSE)

1	REG_GND	LND101
2	N.C	LND102
3	PANEL_REVERSE	LND103
4	PANEL_REVERSE	LND104
5	N.C	LND105
6	REG_GND	LND106

05

CR-082 BOARD

CRADLE TERMINAL

XX MARK:NO MOUNT

VC-472
(16/17)
CN1006
Through the
Flexible Flat Cable
(FFC-086)
Page 4-21
of Level 3

CN502 36P

LANC_SIG	36
LANC_DC	35
BATT/XEXT	34
USB_D-	33
USB_D+	32
REG_GND	31
NTPB	30
TPB	29
NTPA	28
TPA	27
REG_GND	26
USB_DET	25
MULTI_JACK_IN	24
S_Y_I/O	23
REG_GND	22
S_C_I/O	21
REG_GND	20
VIDEO_I/O	19
REG_GND	18
AUDIO_L_I/O	17
AUDIO_R_I/O	16
ACV_GND	15
ACV_GND	14
ACV_GND	13
ACV_GND	12
ACV_GND	11
ACV_GND	10
ACV_GND	9
N.C.	8
ACV_UNREG	7
ACV_UNREG	6
ACV_UNREG	5
ACV_UNREG	4
ACV_UNREG	3
ACV_UNREG	2
ACV_UNREG	1

VD501 XX
VD502 XX
D502 XX
D503 XX
VD505 XX
VD503 XX
VD504 XX

LND502
STATIC_GND
LND501
STATIC_GND

41	39	37	35	33	31	29	27	25	23	21	19	17	15	13	11	9	7	5	3	1	
ACV_GND	ACV_GND	N.C.	NTPB	TPB	TPA	NTPA	LANC_DC	LANC_SIG	(XLANC_JACK_IN)	BATT/XEXT	XCRADLE_IN	N.C.	N.C.	S_C_I/O	REG_GND	S_Y_I/O	(S_JACK_IN)	N.C.	ACV_UNREG	ACV_UNREG	
42	40	38	36	34	32	30	28	26	24	22	20	18	16	14	12	10	8	6	4	2	
ACV_GND	ACV_GND	USB_GND	USB_GND	USB_D-	USB_D+	USB_GND	USB_GND	USB_DET/VBUS	USB_DET/VBUS	(USB_ID)	REG_GND	AUDIO_L_I/O	REG_GND	AUDIO_R_I/O	REG_GND	VIDEO_I/O	MULTI_JACK_IN	N.C.	ACV_UNREG	ACV_UNREG	

44 TO CRADLE UNIT 43

CN501
44P
(MULTI CONNECTOR)

Note: CN501 (multi connector) is not supplied, but this is included in CR-082 complete board.

FP-626
FLEXIBLE BOARD
DC IN

Note: BH001 and J001 are not included in FP-626 flexible board.

LND001	BATT_UNREG 1		
LND002	BATT_UNREG 2		
LND003	BATT_UNREG 3		
LND004	BATT_UNREG 4		
LND005	BATT_UNREG 5	1	BH001 (BATTERY TERMINAL)
LND006	N.C. 6		
LND007	BATT_SIG 7	2	
LND008	REG_GND 8	4	
LND009	REG_GND 9		
LND010	REG_GND 10		
LND011	REG_GND 11		
LND012	REG_GND 12		
LND013	N.C. 13		
LND014	ACV_UNREG 14	2	J001
LND015	ACV_UNREG 15	3	
LND016	ACV_UNREG 16	1	DC IN
LND017	ACV_UNREG 17		
LND018	ACV_UNREG 18		
LND019	BATT/XEXT 19		
LND020	LANC_DC 20	12 LANC_DC	LND112
LND021	LANC_SIG 21	11 LANC_SIG	LND111
LND022	REG_GND 22	10 REG_GND	LND110
LND023	AUDIO_R_I/O 23	9 AUDIO_R_I/O	LND109
LND024	AUDIO_L_I/O 24	8 AUDIO_L_I/O	LND108
LND025	REG_GND 25	7 REG_GND	LND107
LND026	S_Y_I/O 26	6 S_Y_I/O	LND106
LND027	S_C_I/O 27	5 S_C_I/O	LND105
LND028	MULTI_JACK_IN 28	4 MULTI_JACK_IN	LND104
LND029	VIDEO_I/O 29	3 VIDEO_I/O	LND103
LND030	REG_GND 30	2 REG_GND	LND102
LND201	CHASSIS_GND	1 REG_GND	LND101

VC-472 (16/17)
CN2001
(Page 4-21 of Level 3)

AV-112 BOARD
AV CONNECTOR
XX MARK:NO MOUNT

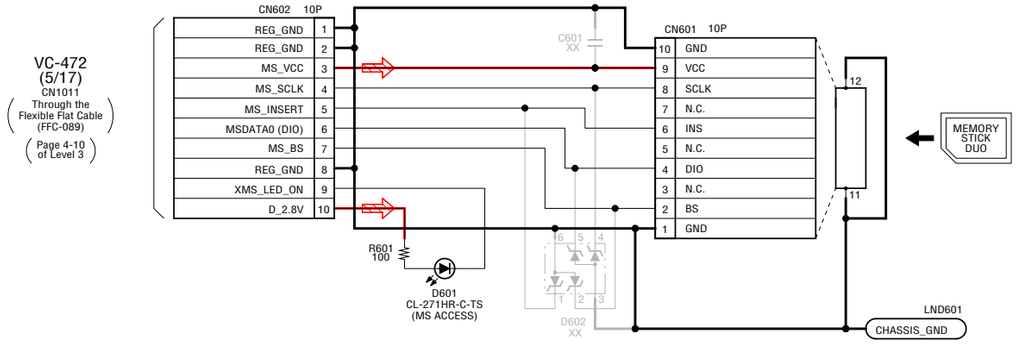
CN401 12P			CN402 14P	
LANC_DC	12	R401 XX, FB401 C	1	AUDIO_L
LANC_SIG	11		2	LANC_SIG
REG_GND	10		3	S_GND
AUDIO_R_I/O	9		4	LANC_DC
AUDIO_L_I/O	8	R402 XX, FB402 C	5	S_C
REG_GND	7		6	AUDIO_R
S_Y_I/O	6		7	JACK_AD
S_C_I/O	5	R403 XX	8	VIDEO/AUDIO_GND
MULTI_JACK_IN	4		9	VIDEO_IN/OUT
VIDEO_I/O	3		10	S_Y
REG_GND	2		12, 11, 14, 13	A/V OUT
REG_GND	1			

• Refer to page 4-3 (English), 4-4 (Japanese) for mark ⚠.

MS-342 BOARD

MS CONNECTOR

XX MARK:NO MOUNT

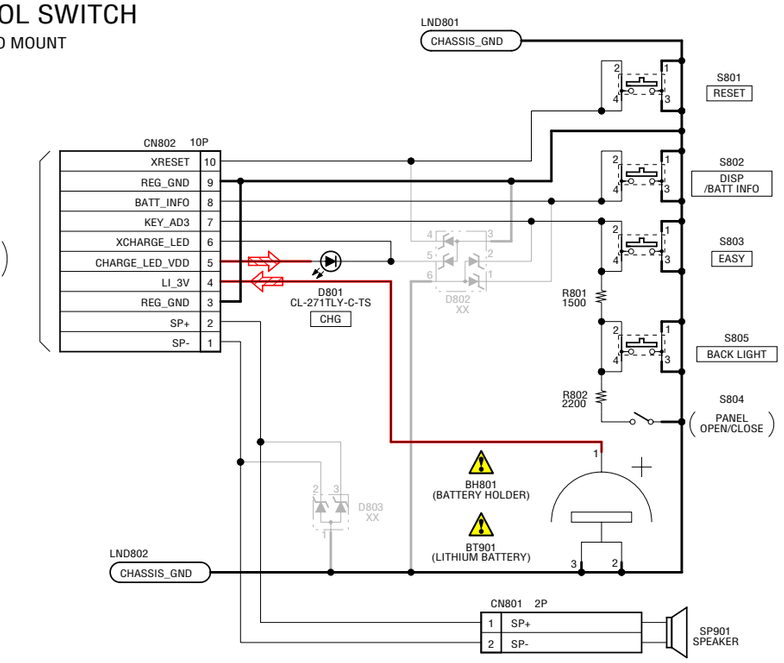


05

CF-102 BOARD

CONTROL SWITCH

XX MARK:NO MOUNT



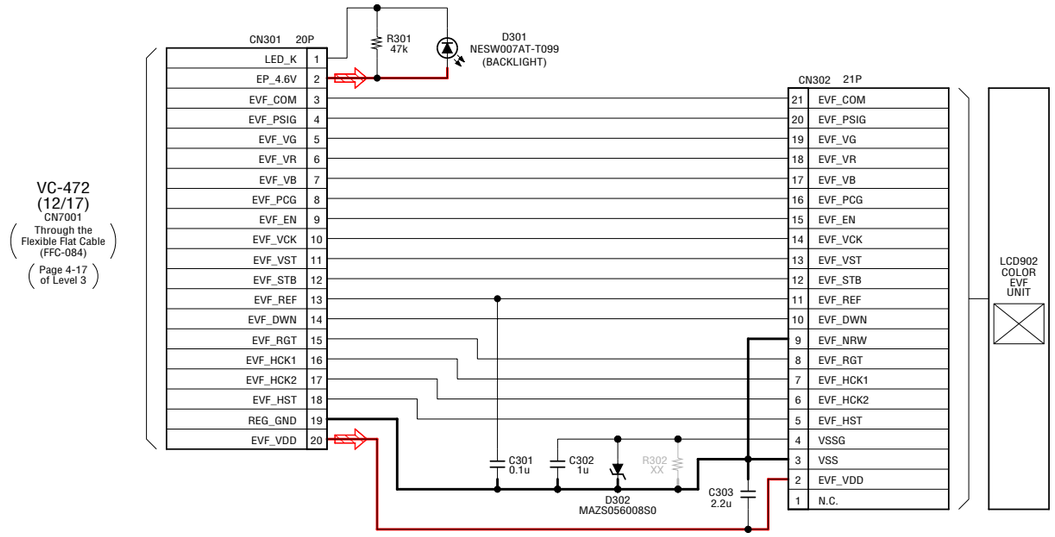
Note: BT901 (lithium battery) is not included in CF-102 complete board.

05

LB-132 BOARD

EVF, EVF BACKLIGHT

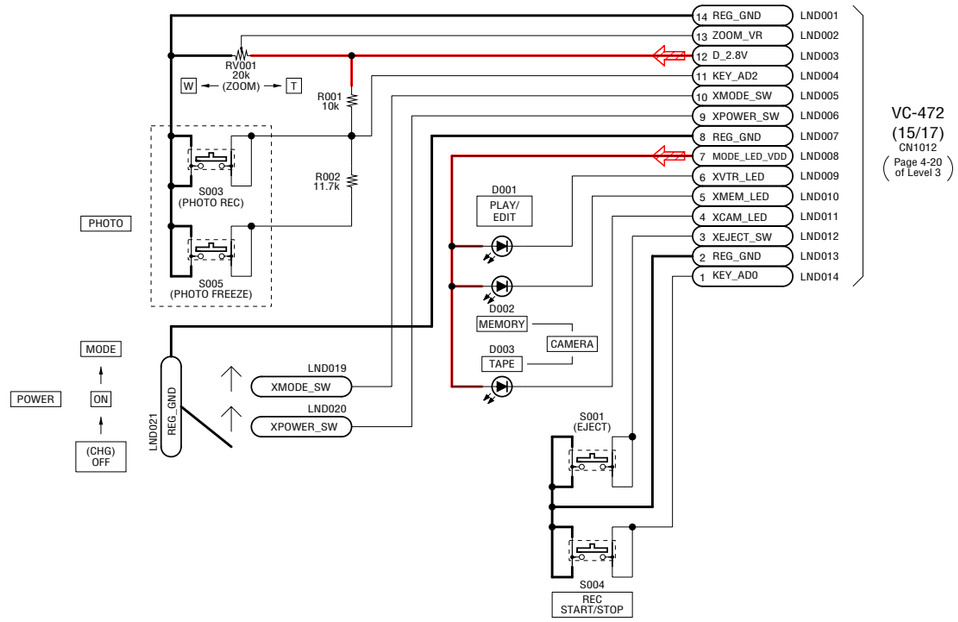
XX MARK:NO MOUNT



05

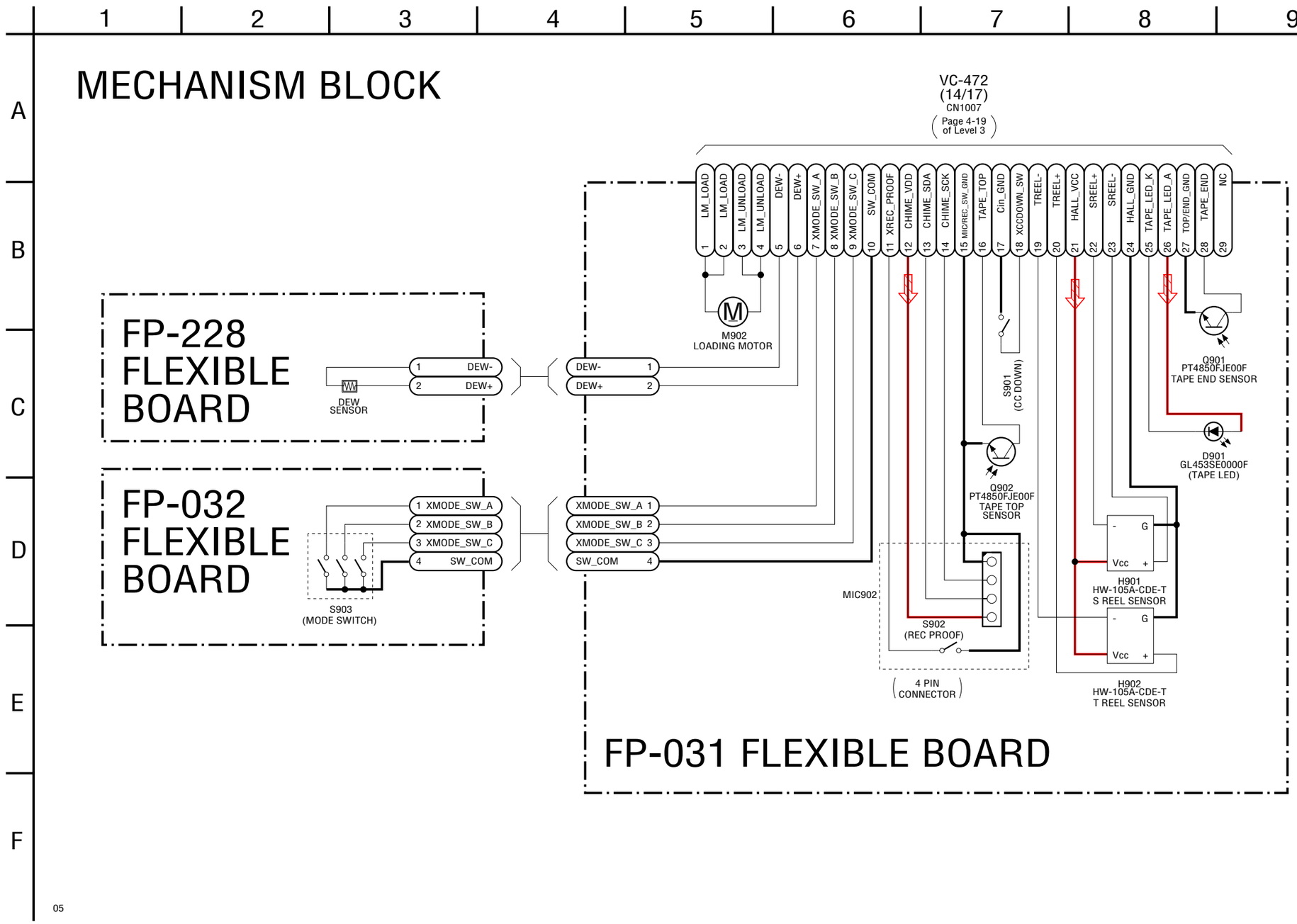
CONTROL KEY BLOCK (SS21200)

CONTROL KEY BLOCK (SS21200) is replaced as block, so that PRINTED WIRING BOARD is omitted.



05

MECHANISM BLOCK



4-3. PRINTED WIRING BOARDS

Link

CD-672 BOARD	AV-112 BOARD
PD-312 BOARD (SIDE A)	MS-342 BOARD
PD-312 BOARD (SIDE B)	LB-132 BOARD
FP-386 FLEXIBLE BOARD	CF-102 BOARD (SIDE A)
CR-082 BOARD	CF-102 BOARD (SIDE B)
FP-626 FLEXIBLE BOARD	FP-031, FP-032, FP-228 FLEXIBLE BOARD

COMMON NOTE FOR PRINTED WIRING BOARDS	MOUNTED PARTS LOCATION

4-3. PRINTED WIRING BOARDS

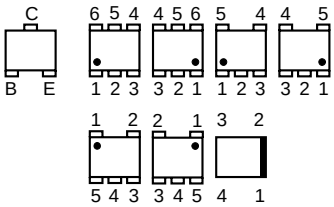
(ENGLISH)

THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS

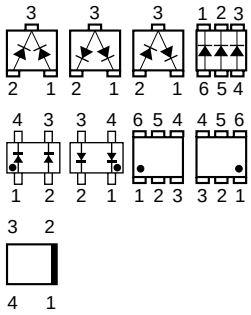
- : Uses unleaded solder.
- : Circuit board
  : Flexible board
  Pattern from the side which enables seeing.
  : pattern of the rear side
  (The other layers' patterns are not indicated)
- Through hole is omitted.
- There are a few cases that the part printed on diagram isn't mounted in this model.
- : panel designation

- Chip parts.

Transistor



Diode



(JAPANESE)

プリント図共通ノート

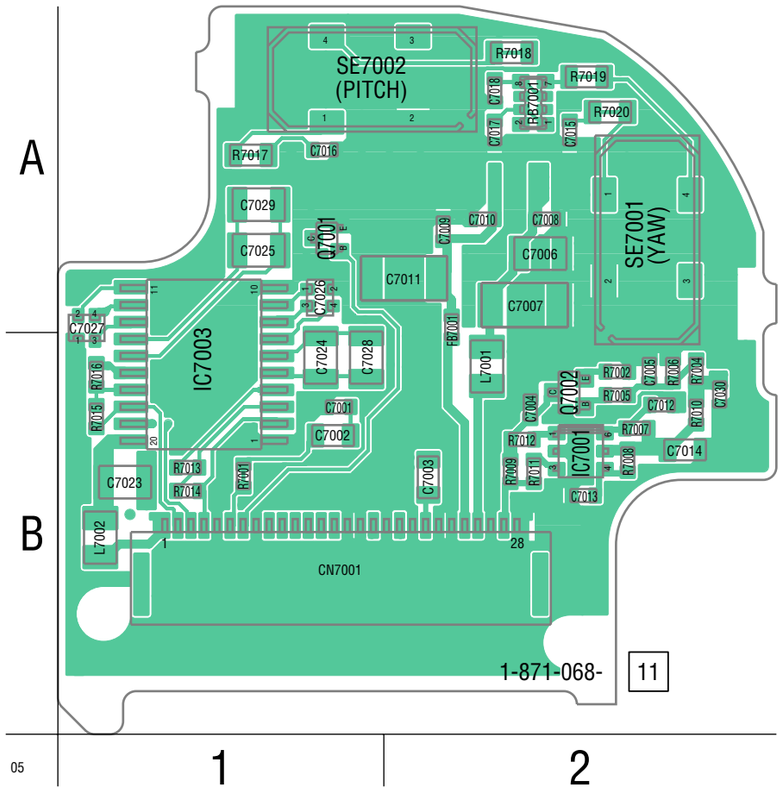
【プリント図ノート】

- ：無鉛半田を使用しています。
- ：基板
  ：フレキシブル配線板
  見ている面側のパターン。
  ：裏側のパターン
  （他のパターンについては表示されていません）
- スルーホールは省略。
- プリント図には，本機で使用していない部品が記載されている場合があります。
- はパネル表示名称。

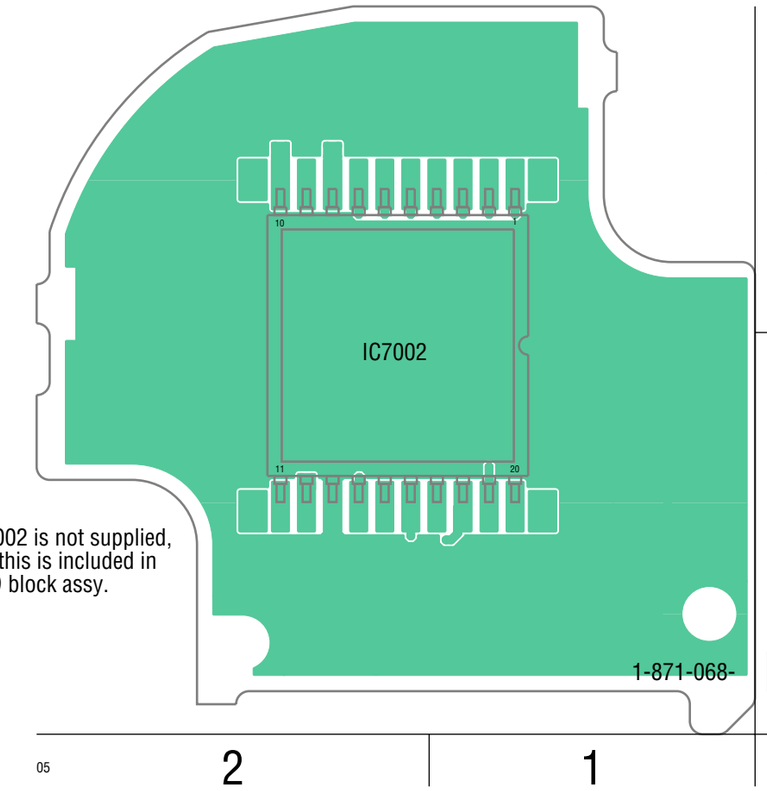
CD-672 (4 layers)

: Uses unleaded solder.

CD-672 BOARD (SIDE A)



CD-672 BOARD (SIDE B)

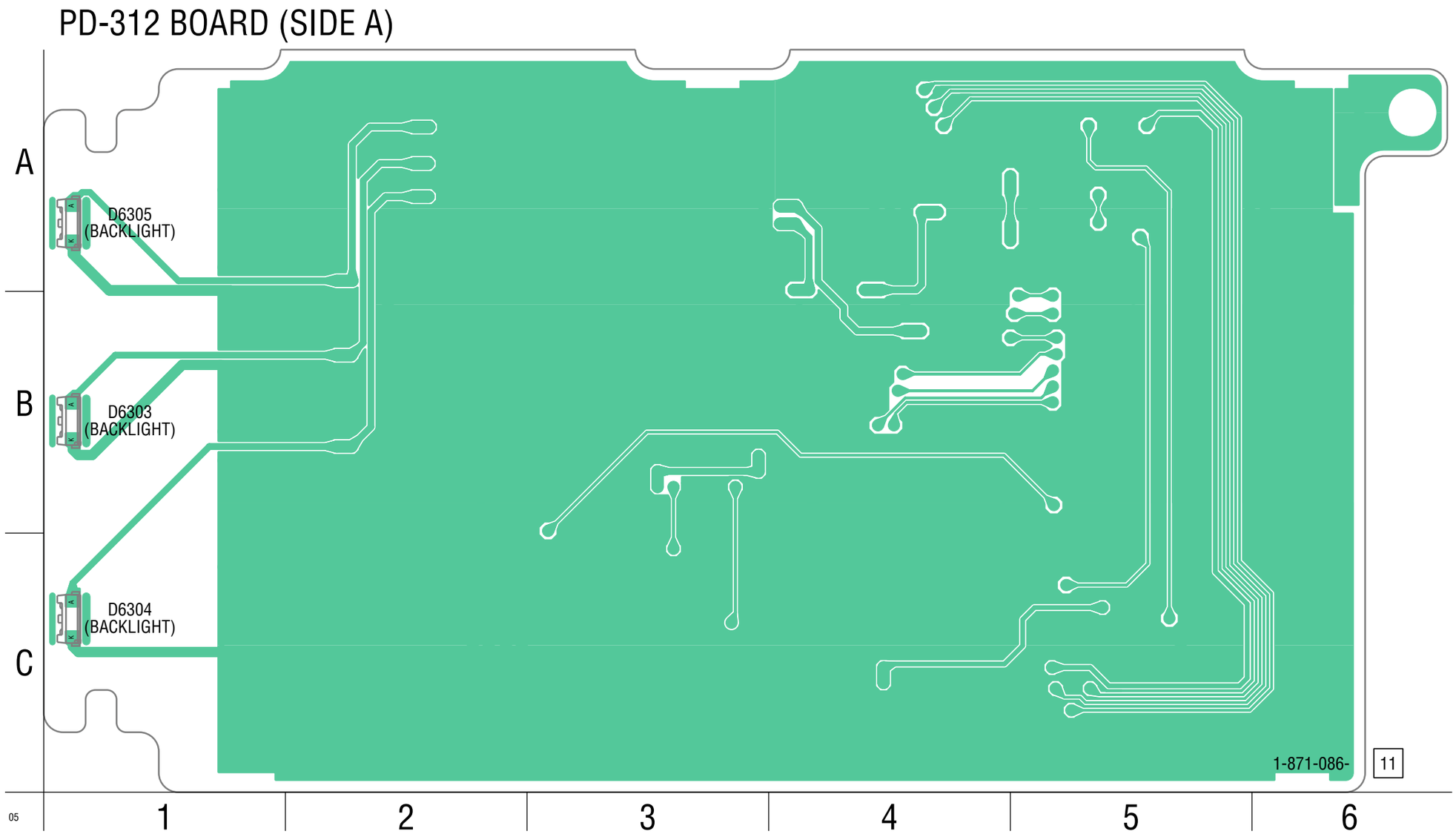


Note: IC7002 is not supplied, but this is included in CCD block assy.

Printed wiring boards of the VC-472 board are not shown.
Pages 4-32 and 4-33 are not shown.

PD-312 (2 layers)

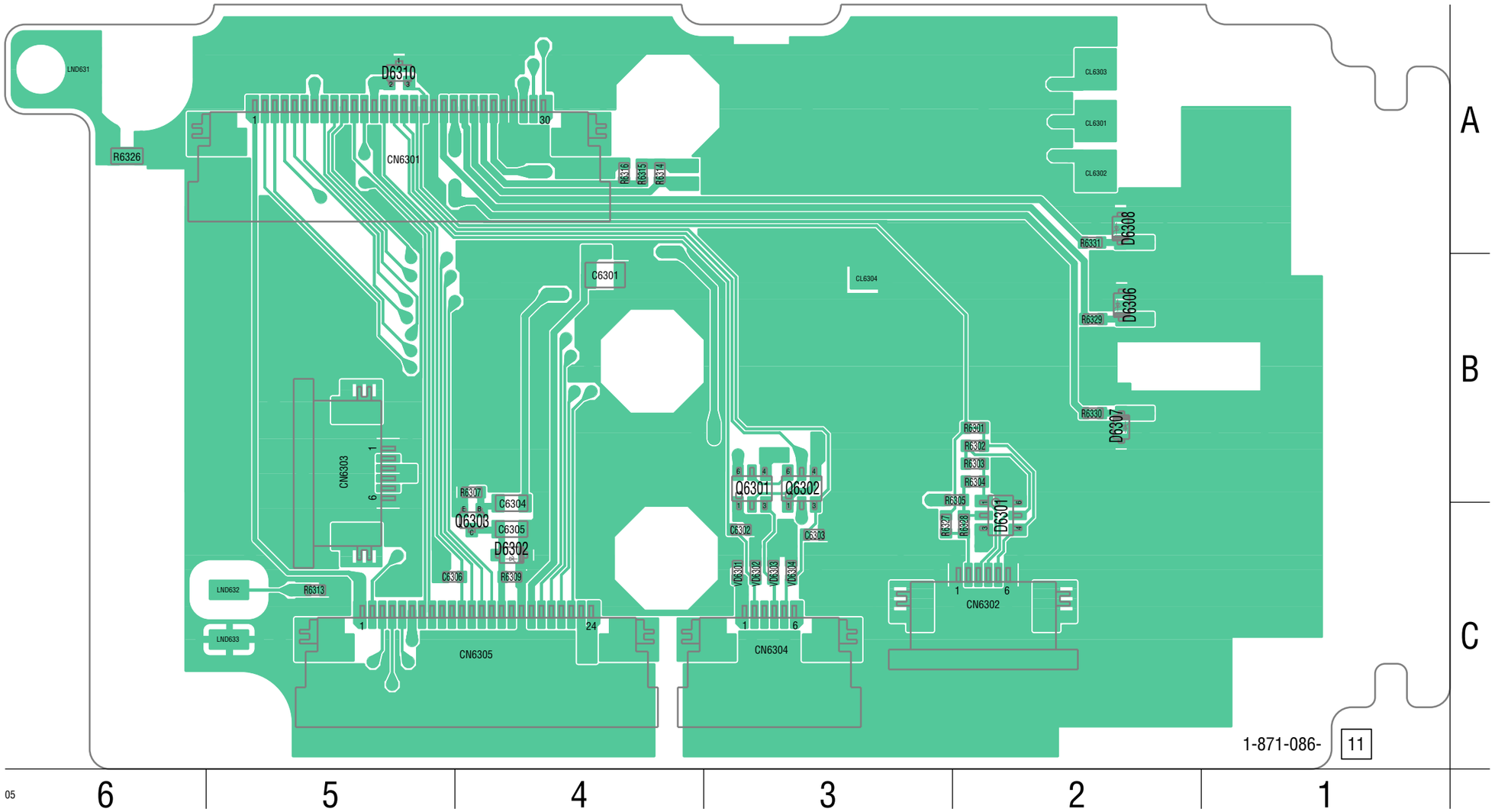
: Uses unleaded solder.



PD-312 (2 layers)

: Uses unleaded solder.

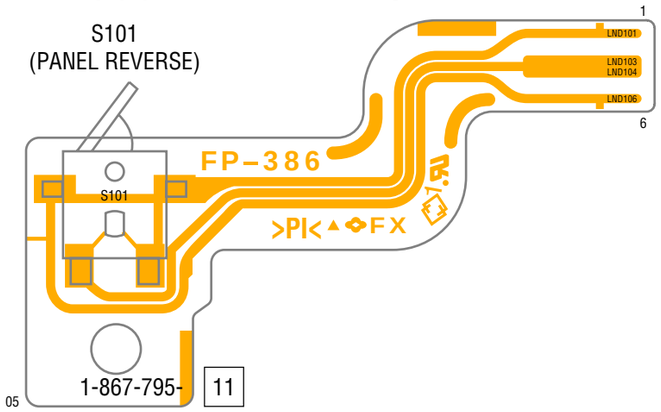
PD-312 BOARD (SIDE B)



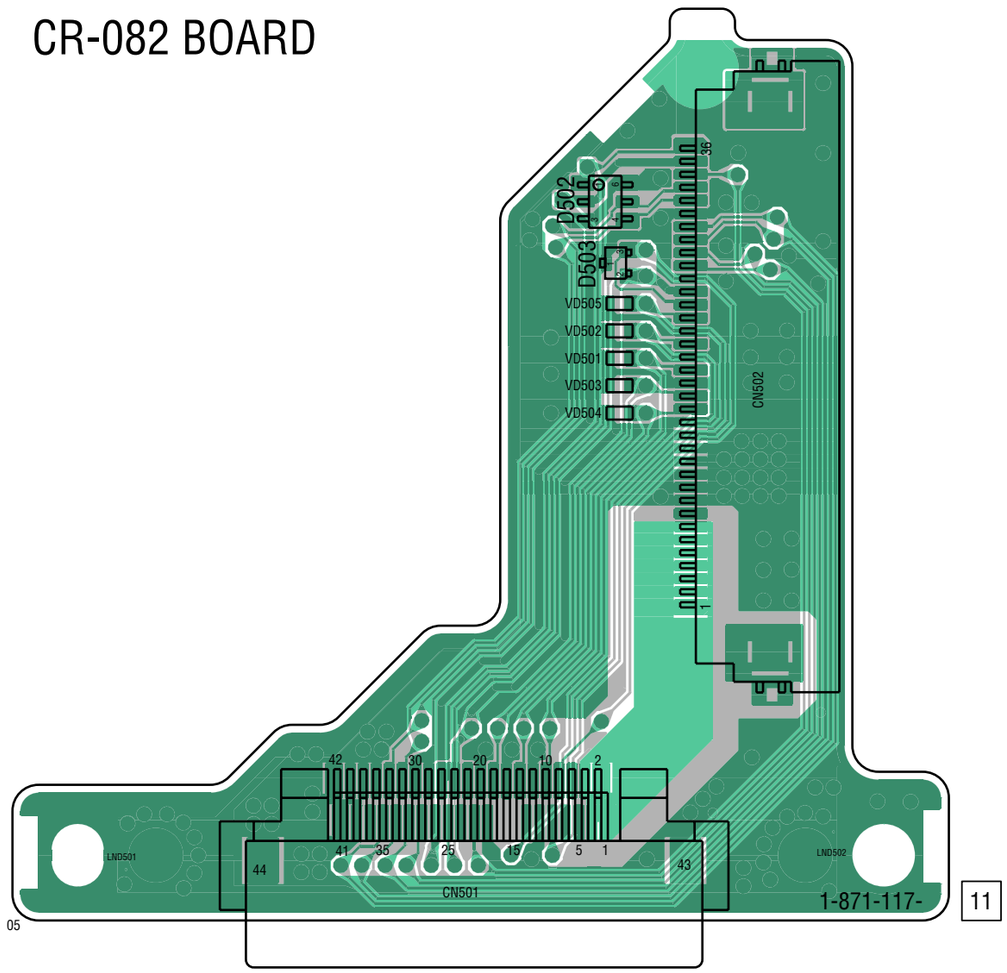
FP-386 (1 layer), CR-082 (2 layers), FP-626 (1 layer)

: Uses unleaded solder.

FP-386 FLEXIBLE BOARD

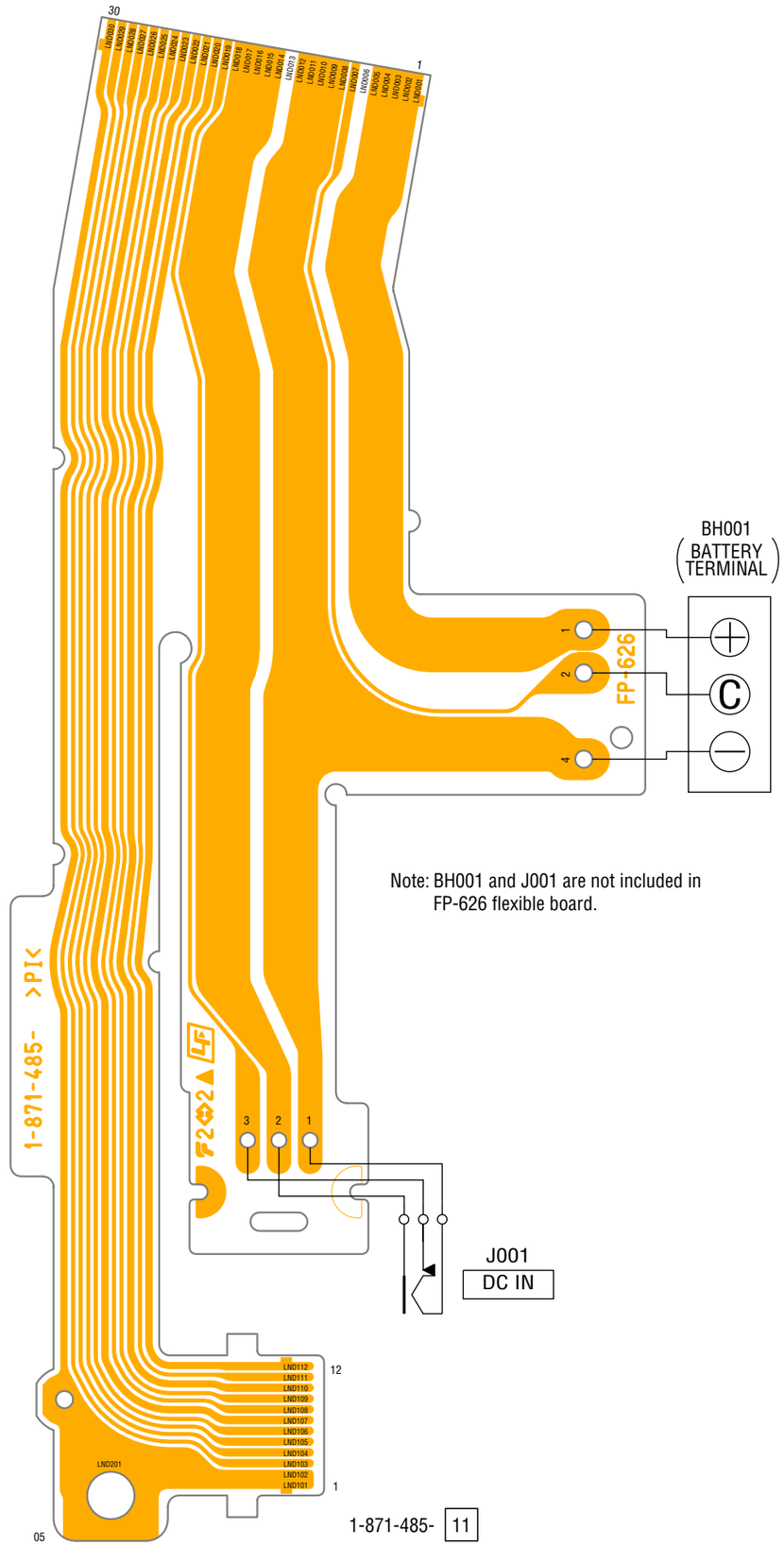


CR-082 BOARD



Note: CN501 (multi connector) is not supplied,
but this is included in CR-082 complete board.

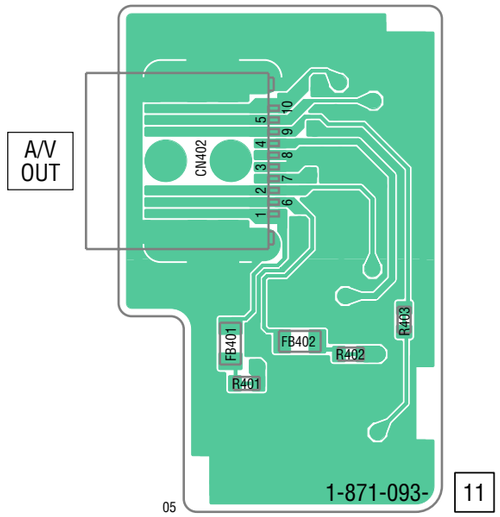
FP-626 FLEXIBLE BOARD



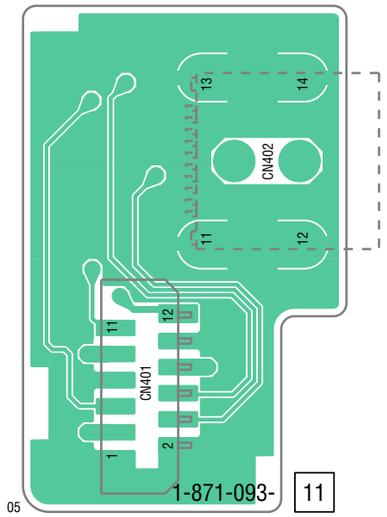
AV-112 (2 layers), MS-342 (2 layers), LB-132 (2 layers)

: Uses unleaded solder.

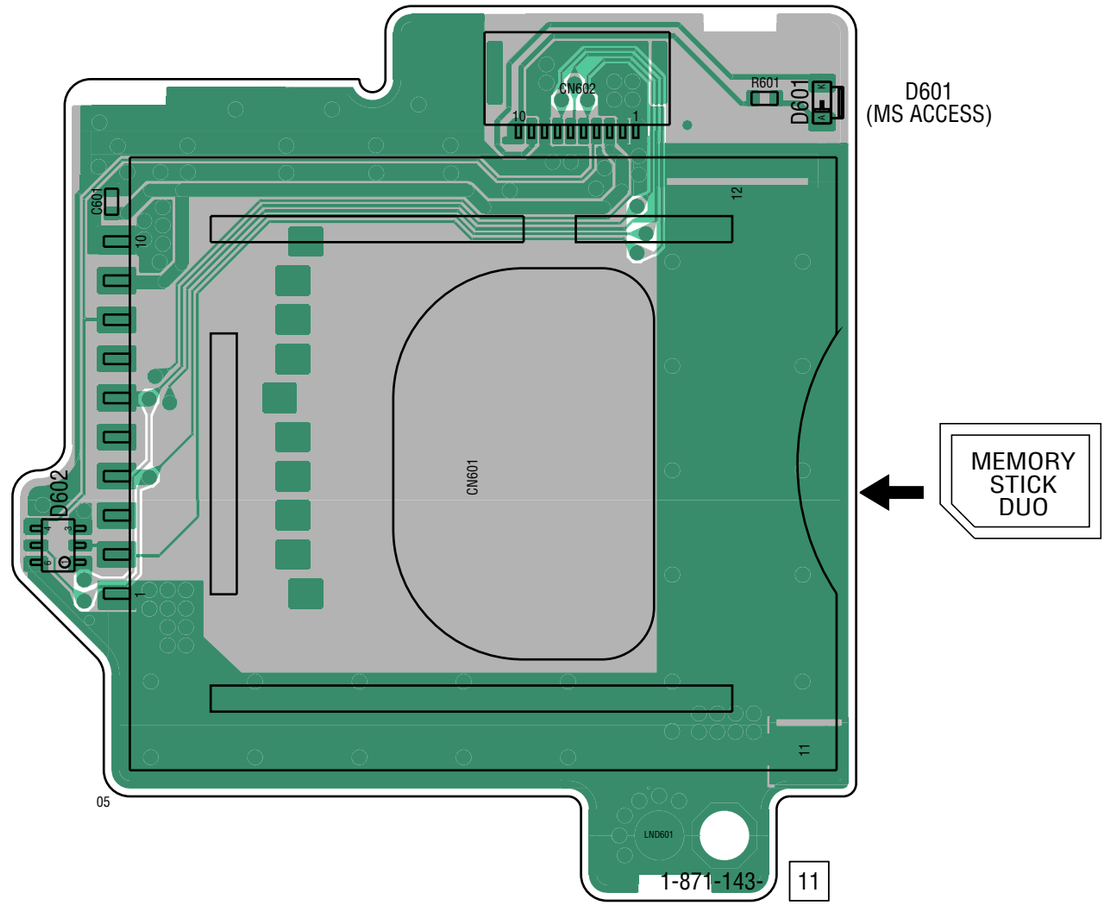
AV-112 BOARD (SIDE A)



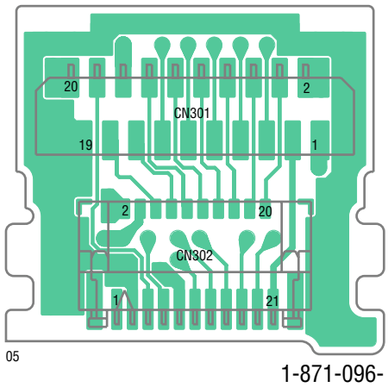
AV-112 BOARD (SIDE B)



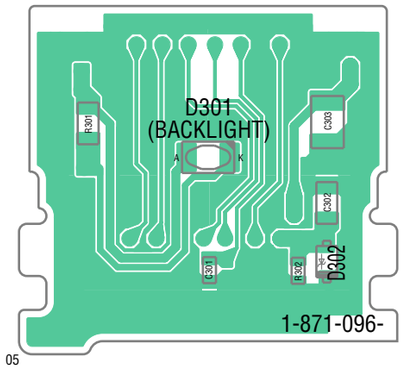
MS-342 BOARD



LB-132 BOARD (SIDE A)

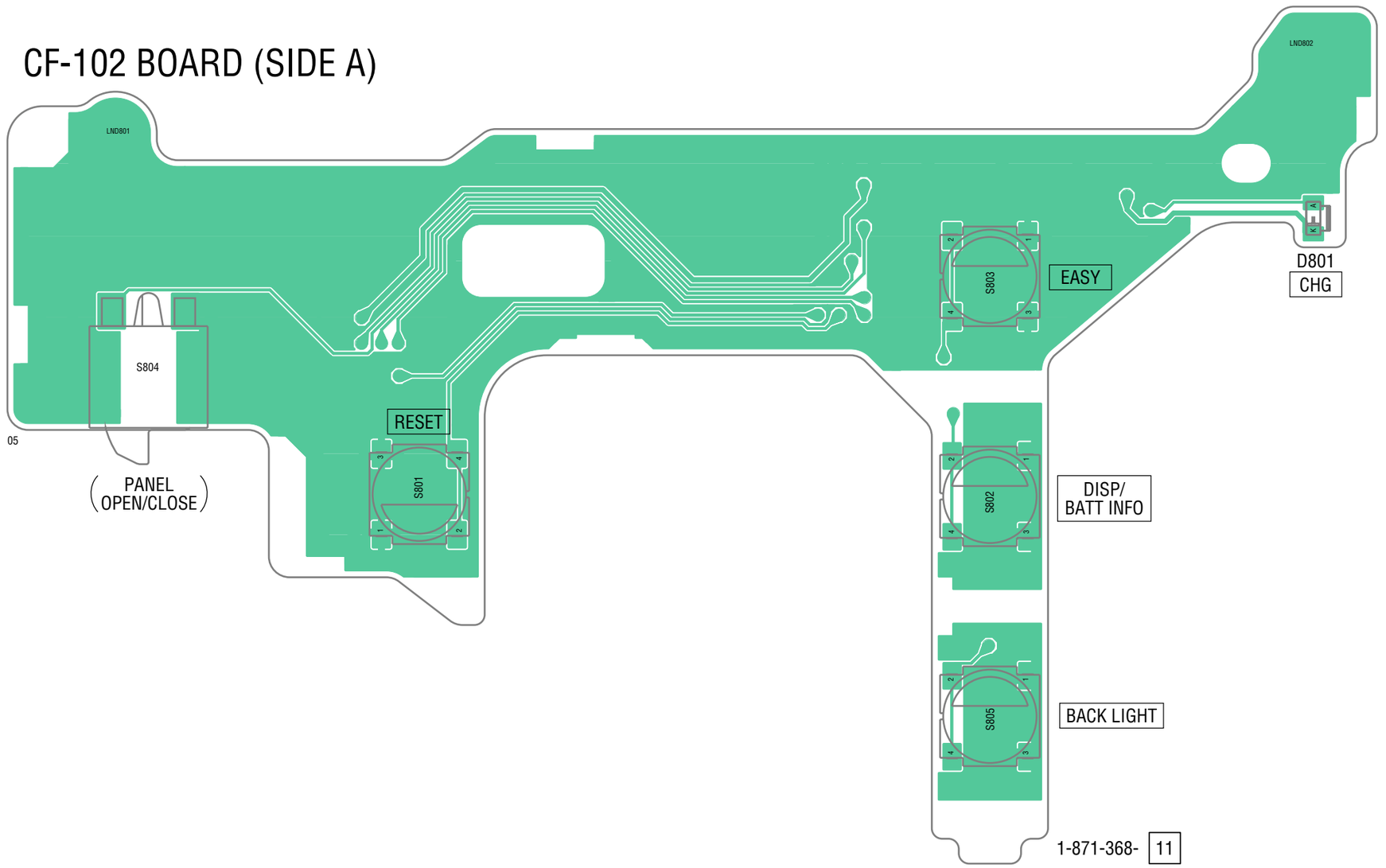


LB-132 BOARD (SIDE B)



CF-102 (2 layers)

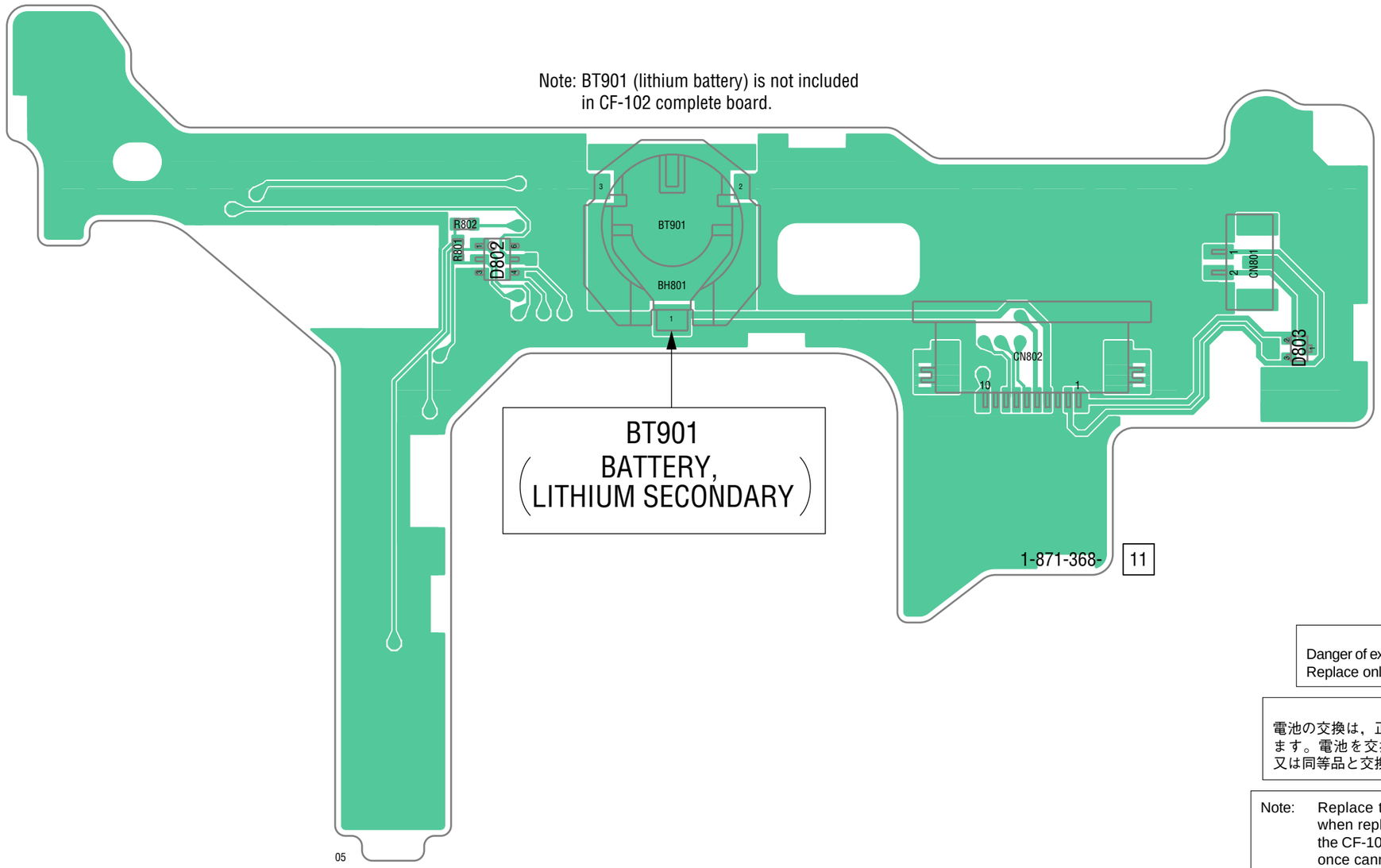
: Uses unleaded solder.



CF-102 (2 layers)

: Uses unleaded solder.

CF-102 BOARD (SIDE B)



CAUTION
Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type.

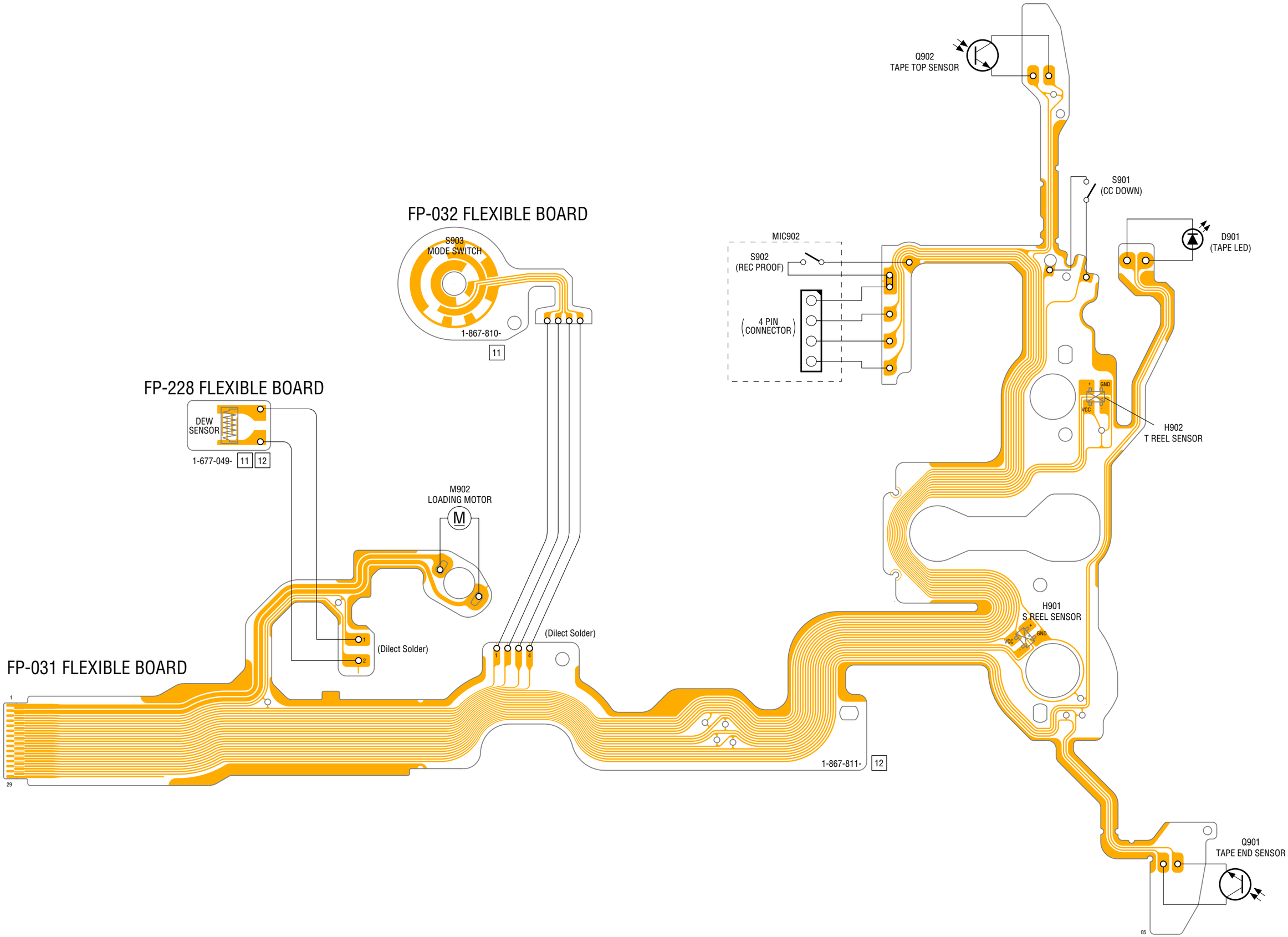
注意
電池の交換は，正しく行わないと破裂する恐れがあります。電池を交換する場合には必ず同じ型名の電池又は同等品と交換してください。

Note: Replace the battery holder (BH801) together when replacing the lithium battery (BT901) on the CF-102 board. (The battery holder removed once cannot be used again.)
When mounting these parts, mount new battery holder first and attach new lithium battery next.

ノート: CF-102基板のリチウム電池（BT901）を交換する場合はバッテリホルダ（BH801）も同時に新品に交換して下さい。（一度使用したバッテリホルダは再使用できません。）
部品取り付けの際は，先にバッテリホルダを取り付けてからリチウム電池を装着して下さい。

FP-031 (1 layer), FP-032 (1 layer), FP-228 (1 layer)

: Uses unleaded solder.



4-4. MOUNTED PARTS LOCATION

no mark : side A
* mark : side B

CD-672 BOARD

C7002 B-1
C7003 B-2
C7005 B-2
C7006 A-2
C7007 A-2
C7010 A-2
C7011 A-2
C7015 A-2
C7016 A-1
C7017 A-2
C7018 A-2
C7023 B-1
C7024 B-1
C7025 A-1
C7026 A-1
C7027 A-1
C7028 B-1
C7029 A-1

CN7001 B-1

FB7001 A-2

* IC7002 B-2
IC7003 B-1

L7001 B-2
L7002 B-1

Q7001 A-1
Q7002 B-2

R7002 B-2
R7004 B-2
R7005 B-2
R7006 B-2
R7013 B-1
R7014 B-1
R7015 B-1
R7016 B-1

RB7001 A-2

SE7001 A-2
SE7002 A-1

Mounted parts location of the VC-472 board are not shown.
Pages 4-42 and 4-43 are not shown.

4-3. PRINTED WIRING BOARDS

no mark : side A
* mark : side B

PD-312 BOARD

* C6302 C-3
* C6303 C-3
* C6304 C-4
* C6305 C-4
* C6306 C-5

* CN6301 A-5
* CN6302 C-2
* CN6303 B-5
* CN6304 C-3
* CN6305 C-4

* D6302 C-4
  D6303 B-1
  D6304 C-1
  D6305 A-1

* Q6301 B-3
* Q6302 B-3
* Q6303 C-4

* R6302 B-2
* R6303 B-2
* R6304 B-2
* R6305 B-2
* R6307 B-4
* R6309 C-4

* VD6301 C-3
* VD6302 C-3
* VD6303 C-3
* VD6304 C-3

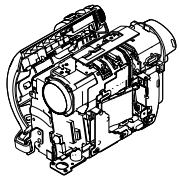
NOTE

5. REPAIR PARTS LIST

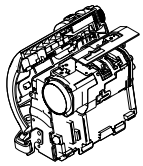
NOTE: Characters A to Z of the electrical parts list indicate location of exploded views in which the desired part is shown.

Link EXPLODED VIEWS

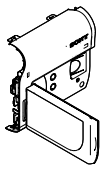
A OVERALL SECTION



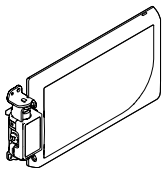
B BOTTOM FRAME SECTION



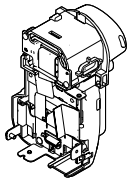
C CABINET (L) SECTION



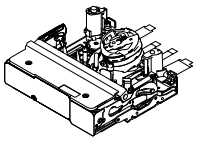
D CABINET (R) SECTION



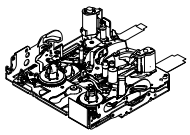
E LCD PANEL BLOCK



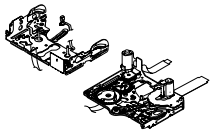
F BT-EVF SECTION



G MECHANISM DECK SECTION



H LS/MECHANICAL CHASSIS BLOCK ASSEMBLY-1



I LS/MECHANICAL CHASSIS BLOCK ASSEMBLY-2

Link ELECTRICAL PARTS LIST

ACCESSORIES

AV-112 BOARD F	FP-031 FLEXIBLE BOARD I	FP-626 FLEXIBLE BOARD F
CD-672 BOARD C	FP-032 FLEXIBLE BOARD I	LB-132 BOARD F
CF-102 BOARD D	FP-228 FLEXIBLE BOARD I	MS-342 BOARD B
CR-082 BOARD B	FP-386 FLEXIBLE BOARD E	PD-312 BOARD E

5. REPAIR PARTS LIST

(ENGLISH)

NOTE:

- -XX, -X mean standardized parts, so they may have some differences from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- CAPACITORS:
  uF: µF
- COILS
  uH: µH
- RESISTORS
  All resistors are in ohms.
  METAL: metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F: nonflammable
- SEMICONDUCTORS
  In each case, u: µ, for example:
  uA...: µA... , uPA... , µPA... ,
  uPB... , µPB... , uPC... , µPC... ,
  uPD..., µPD...

When indicating parts by reference number, please include the board name.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

- Color Indication of Appearance Parts
  Example:
  (SILVER) : Cabinet's Color
  (Silver) : Parts Color

(JAPANESE)

【使用上の注意】

- ここに記載されている部品は, 補修用部品であるため, 回路図及びセットに付いている部品と異なる場合があります。
- -XX, -Xは標準化部品のため, セットに付いている部品と異なる場合があります。
- *印の部品は常備在庫しておりません。
- コンデンサの単位でuFは µFを示します。
- 抵抗の単位Ωは省略してあります。
  金　　被：金属被膜抵抗。
  サンキン：酸化金属被膜抵抗。
- インダクタの単位でuHは µHを示します。
- 半導体の名称でuA..., uPA..., uPB..., uPC..., uPD...等はそれぞれ µA..., µPA..., µPB..., µPC..., µPD...を示します。

お願い
図面番号で部品を指定するときは基板名又はブロックを併せて指定してください。

⚠印の部品，または⚠印付の点線で囲まれた部品は，安全性を維持するために，重要な部品です。
従って交換時は,必ず指定の部品を使用してください。

- 外装部品色表示
  例：
  (SILVER):セットの色を表す。
  (Silver) : 部品の色を表す。

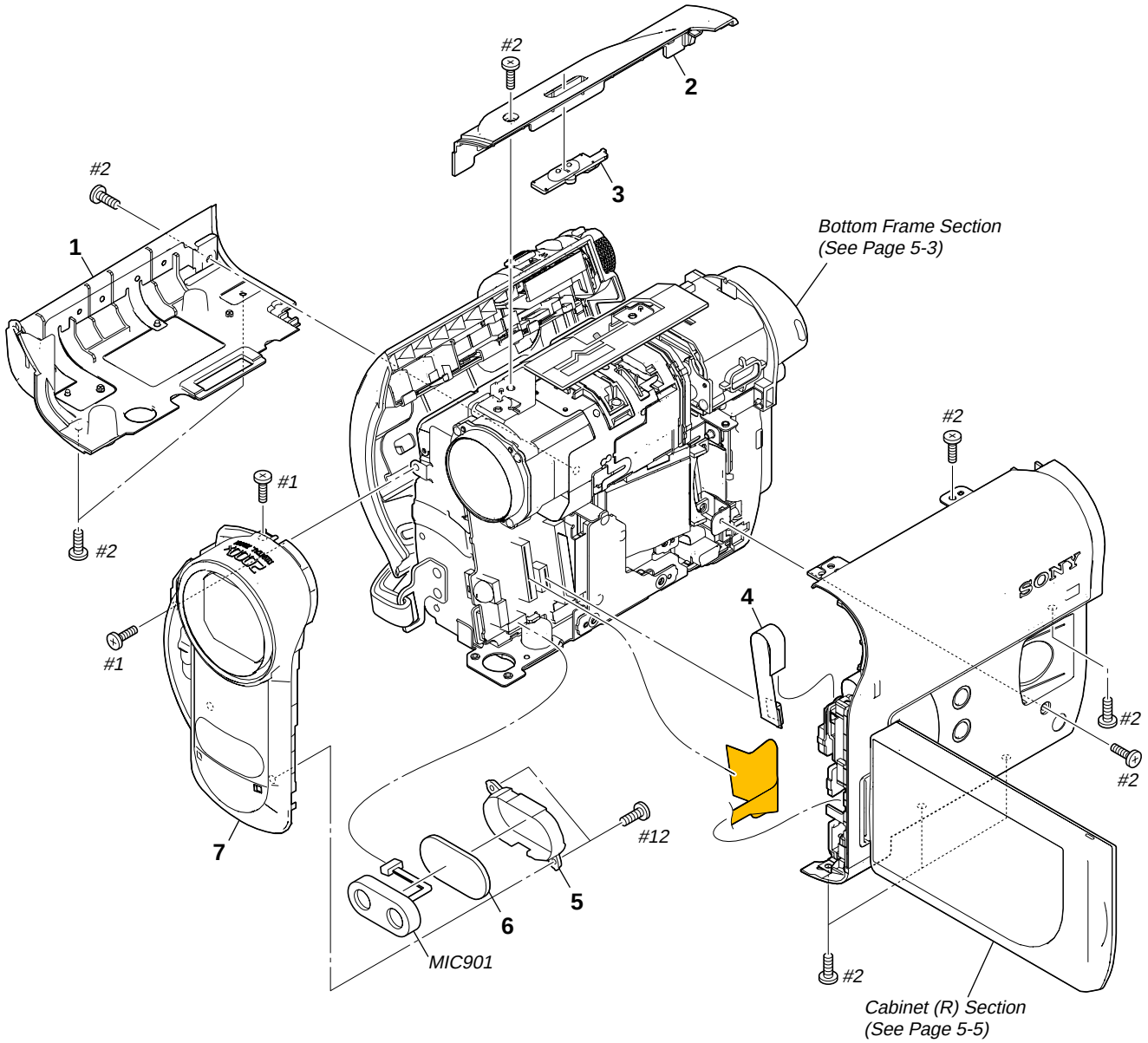
- Abbreviation
  AR : Argentine model
  AUS : Australian model
  BR : Brazilian model
  CH : Chinese model
  CND : Canadian model
  EE : East European model
  HK : Hong Kong model
  J : Japanese model
  JE : Tourist model
  KR : Korea model
  NE : North European model

5. REPAIR PARTS LIST

DISASSEMBLY | HARDWARE LIST

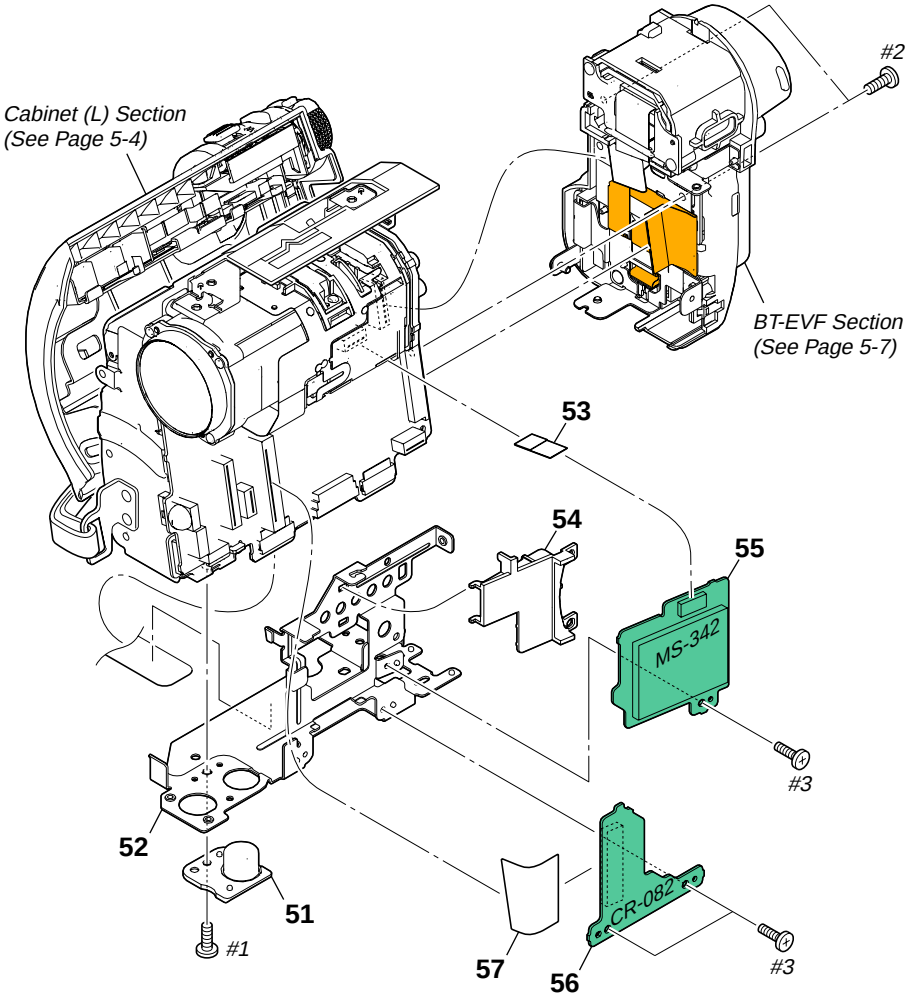
5-1. EXPLODED VIEWS

5-1-1. OVERALL SECTION



Ref. No.	Part No.	Description
1	X-2176-373-1	CABINET (L (215)) ASSY
2	2-899-773-01	CABINET (UPPER)
3	2-899-772-01	KNOB (215), NS
4	1-833-206-11	CABLE, FLEXIBLE FLAT (FFC-085)
5	2-899-716-01	RETAINER, MICROPHONE
6	2-899-717-01	CUSHION, MICROPHONE
7	X-2176-364-1	PANEL (215) ASSY, F (EXCEPT J)
7	X-2176-365-1	PANEL (215J) ASSY, F (J)
MIC901	1-542-712-11	MICROPHONE UNIT
#1	2-635-562-11	SCREW (M1.7) (Black)
#2	2-635-562-31	SCREW (M1.7) (Black)
#12	3-080-204-21	SCREW, TAPPING, P2 (Black)

5-1-2. BOTTOM FRAME SECTION

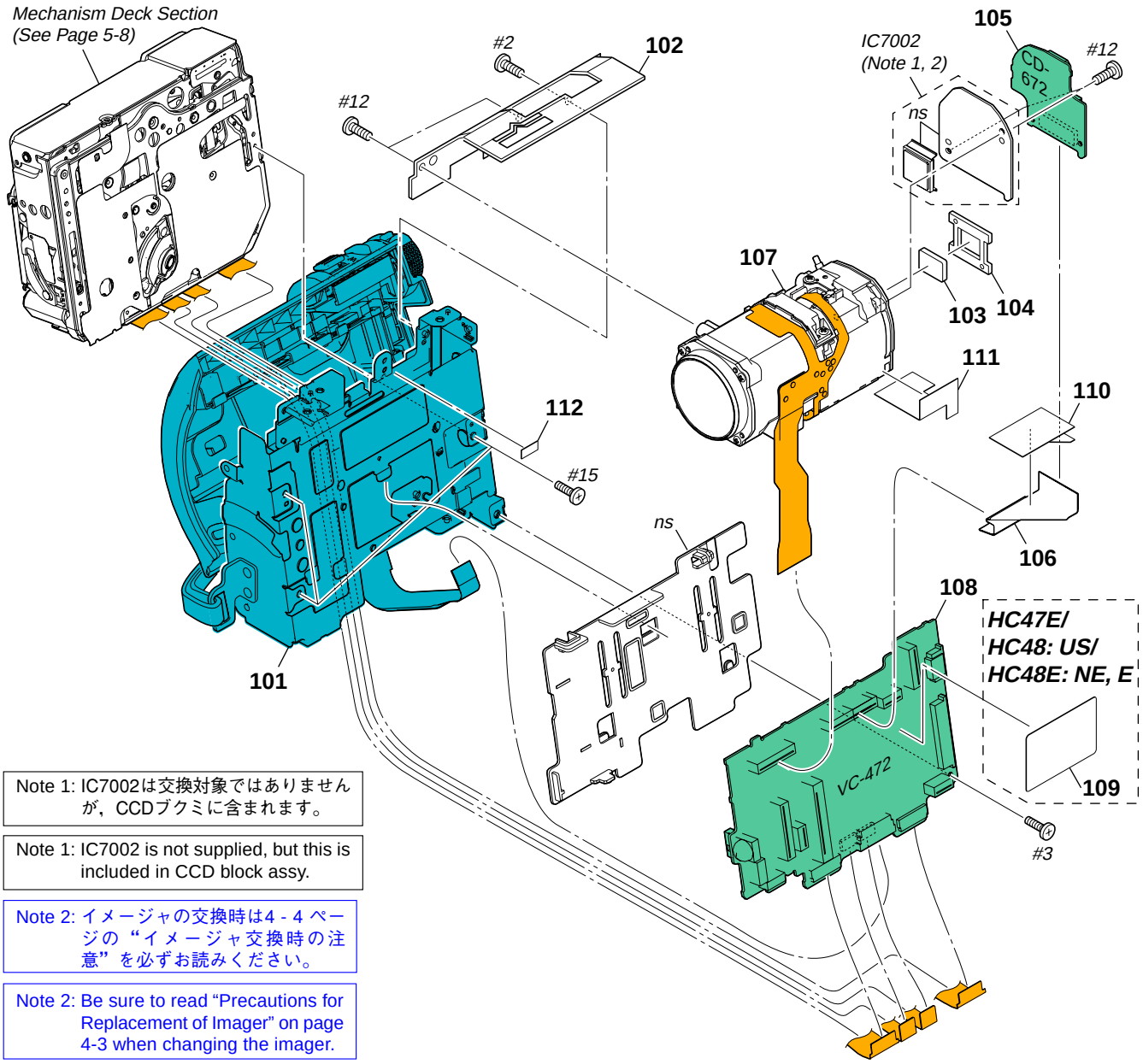


Ref. No.	Part No.	Description
51	2-899-769-01	SCREW, TRIPOD
* 52	2-899-767-01	FRAME, BOTTOM
53	1-833-207-11	CABLE, FLEXIBLE FLAT (FFC-086)
54	2-899-768-01	CABINET, MS
55	A-1212-565-A	MS-342 BOARD, COMPLETE

Ref. No.	Part No.	Description
56	A-1212-567-A	CR-082 BOARD, COMPLETE
57	1-833-210-11	CABLE, FLEXIBLE FLAT (FFC-089)
#1	2-635-562-11	SCREW (M1.7) (Black)
#2	2-635-562-31	SCREW (M1.7) (Black)
#3	2-660-401-01	SCREW (M1.7), NEW TRU-STAR, P2 (Red)

5-1-3. CABINET (L) SECTION

ns: not supplied



Note 1: IC7002は交換対象ではありませんが，CCDブクミに含まれます。

Note 1: IC7002 is not supplied, but this is included in CCD block assy.

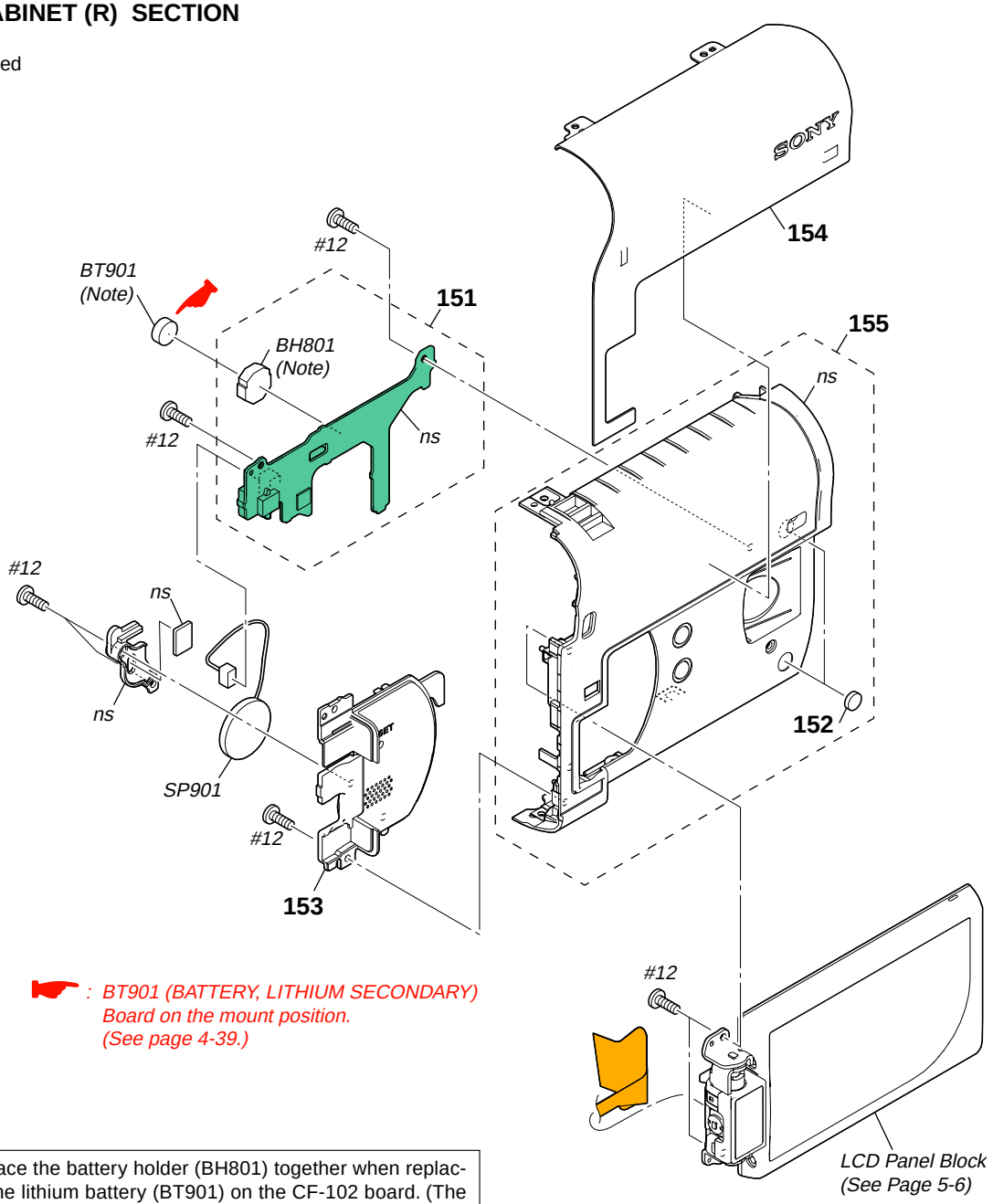
Note 2: イメージャの交換時は4 - 4 ページの “イメージャ交換時の注意” を必ずお読みください。

Note 2: Be sure to read “Precautions for Replacement of Imager” on page 4-3 when changing the imager.

Ref. No.	Part No.	Description
101	1-479-928-21	KEY BLOCK, CONTROL (SS21200) (EXCEPT J)
101	1-479-928-31	KEY BLOCK, CONTROL (SS21200) (J)
102	2-899-770-01	PLATE, NS CLICK
103	1-788-523-11	OPTICAL FILTER BLOCK (OFB-06-11)
104	3-088-645-01	RUBBER (Z), SEAL
105	A-1212-400-A	CD-672 BOARD, COMPLETE
106	1-833-676-11	CABLE, FLEXIBLE FLAT (FFC-004)
107	A-1248-849-A	LENS (BLOCK ASSY 1180 (J1))
108	A-1212-718-A	VC-472 BOARD, COMPLETE (HC48)
108	A-1212-719-A	VC-472 BOARD, COMPLETE (HC47E/HC48E)
109	2-659-500-01	LABEL, FUSE REPLACEMENT CAUTION (HC47E/HC48: US/HC48E: NE, E)
* 110	3-095-468-01	SHEET (CD (215)), COPY
* 111	3-095-521-01	SHEET/GUARD
112	2-899-740-01	CUSHION, ELECTROSTATIC
IC7002	A-1216-665-A	CCD BLOCK ASSY (1M) (CCD IMAGER) (Note1, 2)
#2	2-635-562-31	SCREW (M1.7) (Black)
#3	2-660-401-01	SCREW (M1.7), NEW TRU-STAR, P2 (Red)
#12	3-080-204-21	SCREW, TAPPING, P2 (Black)
#15	3-062-214-01	SCREW (M1.4X1.5) (Silver)

5-1-4. CABINET (R) SECTION

ns: not supplied



: *BT901 (BATTERY, LITHIUM SECONDARY) Board on the mount position. (See page 4-39.)*

Note: Replace the battery holder (BH801) together when replacing the lithium battery (BT901) on the CF-102 board. (The battery holder removed once cannot be used again.) When mounting these parts, mount new battery holder first and attach new lithium battery next.

Note: CF-102基板のリチウム電池(BT901)を交換する場合はバッテリホルダ(BH801)も同時に新品に交換して下さい。(一度使用したバッテリホルダは再使用できません。) 部品取り付けの際は，先にバッテリホルダを取り付けてからリチウム電池を装着して下さい。

CAUTION
Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type.

注意
電池の交換は，正しく行わないと破裂する恐れがあります。電池を交換する場合には必ず同じ型名の電池又は同等品と交換してください。

• Refer to page 5-1 for mark ⚠.

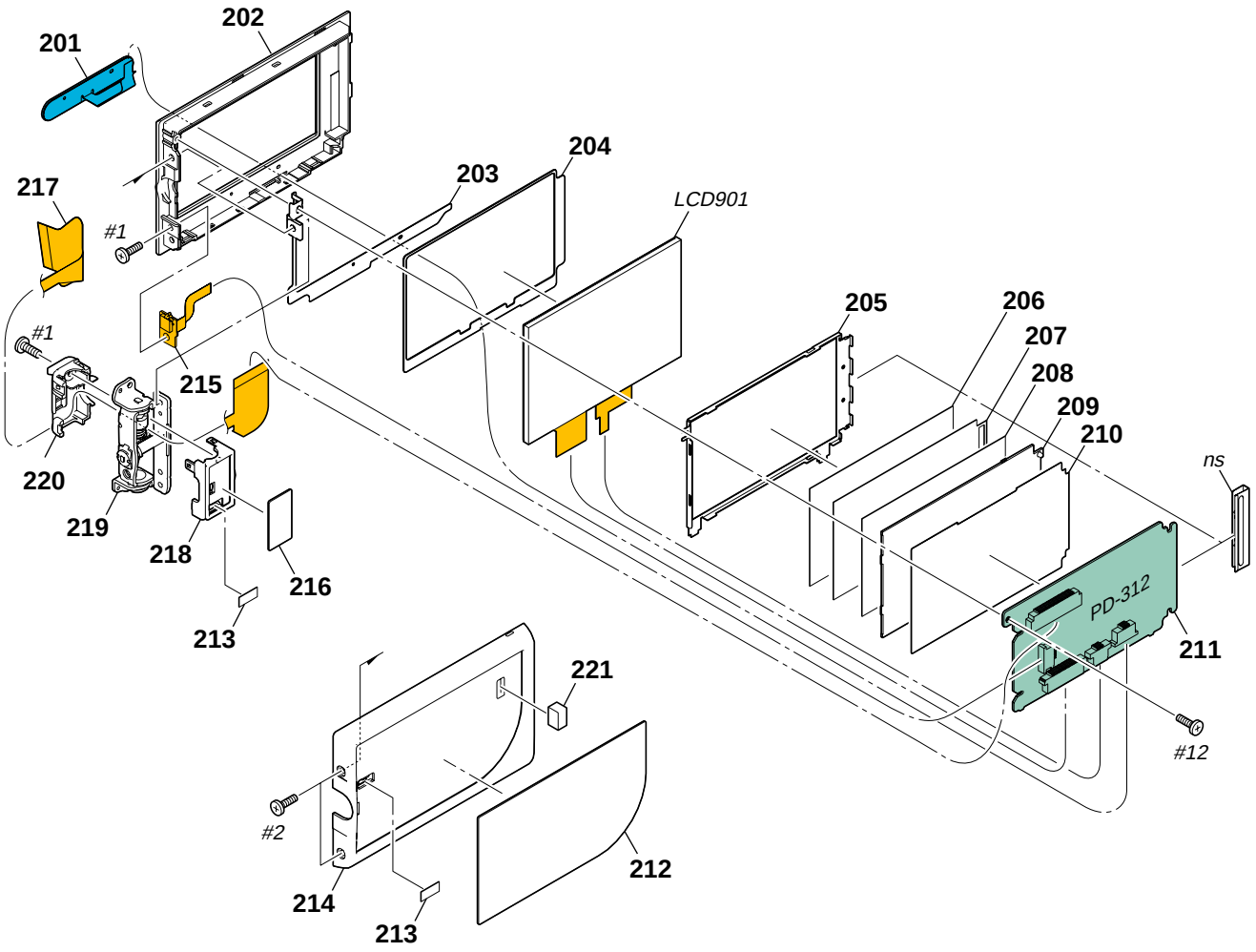
Ref. No.	Part No.	Description
151	A-1212-683-A	CF-102 BOARD, COMPLETE
152	3-089-565-01	CUSHION (R), PANEL
153	X-2176-367-1	BLIND ASSY, HINGE
154	2-899-759-11	PLATE, R ORNAMENTAL
155	X-2176-369-1	CABINET (R (215)) ASSY (EXCEPT J)

Ref. No.	Part No.	Description
155	X-2176-370-1	CABINET (R (215J)) ASSY (J)
⚠BH801	1-756-615-41	HOLDER, BATTERY (Note)
⚠BT901	1-756-134-12	BATTERY, STORAGE, LITHIUM (Note)
SP901	1-825-260-23	LOUD SPEAKER (1.6CM)
#12	3-080-204-21	SCREW, TAPPING, P2 (Black)

HARDWARE LIST

5-1-5. LCD PANEL BLOCK

ns: not supplied

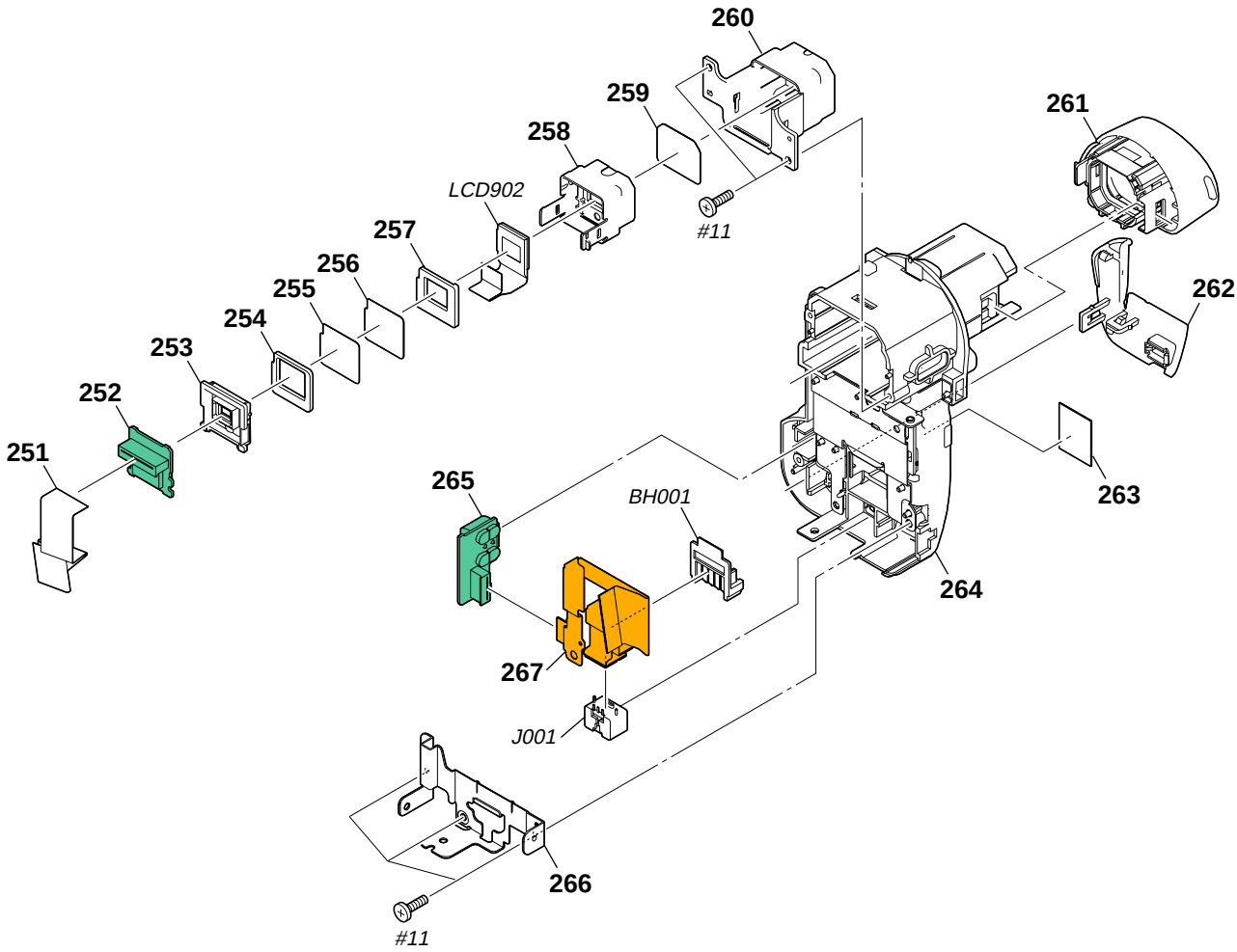


Ref. No.	Part No.	Description
201	1-478-984-11	KEY BLOCK, CONTROL (SB10600)
202	2-899-743-01	CABINET (M (215)), P (EXCEPT J)
202	2-899-743-11	CABINET (M (215)), P (J)
* 203	2-899-745-01	PLATE (215), LCD GROUND
* 204	2-899-747-01	CUSHION (2.7), TP
205	2-694-516-01	FRONT FRAME (2.7)
206	2-694-512-01	PRISM SHEET V (2.7)
207	2-694-513-01	PRISM SHEET H (2.7)
208	2-694-514-01	DIFFUSION SHEET (2.7)
209	2-666-801-11	LIGHT GUIDE (2.7)
210	2-694-515-01	REFLECTION SHEET (2.7)
211	A-1212-630-A	PD-312 BOARD, COMPLETE
212	2-899-738-11	PLATE, PANEL ORNAMENT (HC48/HC48E)
212	2-899-738-41	PLATE, PANEL ORNAMENT (HC47E)

Ref. No.	Part No.	Description
213	2-899-740-01	CUSHION, ELECTROSTATIC
214	2-899-735-01	CABINET (C), P
215	A-1153-842-A	FP-386 FLEXIBLE BOARD, COMPLETE
216	2-899-739-11	PLATE, HINGE ORNAMENTAL
217	1-871-484-11	FP-625 FLEXIBLE BOARD
218	2-899-736-01	COVER (C), HINGE
219	X-2149-207-1	HINGE ASSY (M), PANEL
220	2-899-737-01	COVER (M), HINGE
* 221	3-096-097-01	CUSHION (P), EMC
LCD901	A-1202-057-A	TP BLOCK ASSY (27TSTNI07)
#1	2-635-562-11	SCREW (M1.7) (Black)
#2	2-635-562-31	SCREW (M1.7) (Black)
#12	3-080-204-21	SCREW, TAPPING, P2 (Black)

HARDWARE LIST

5-1-6. BT-EVF SECTION

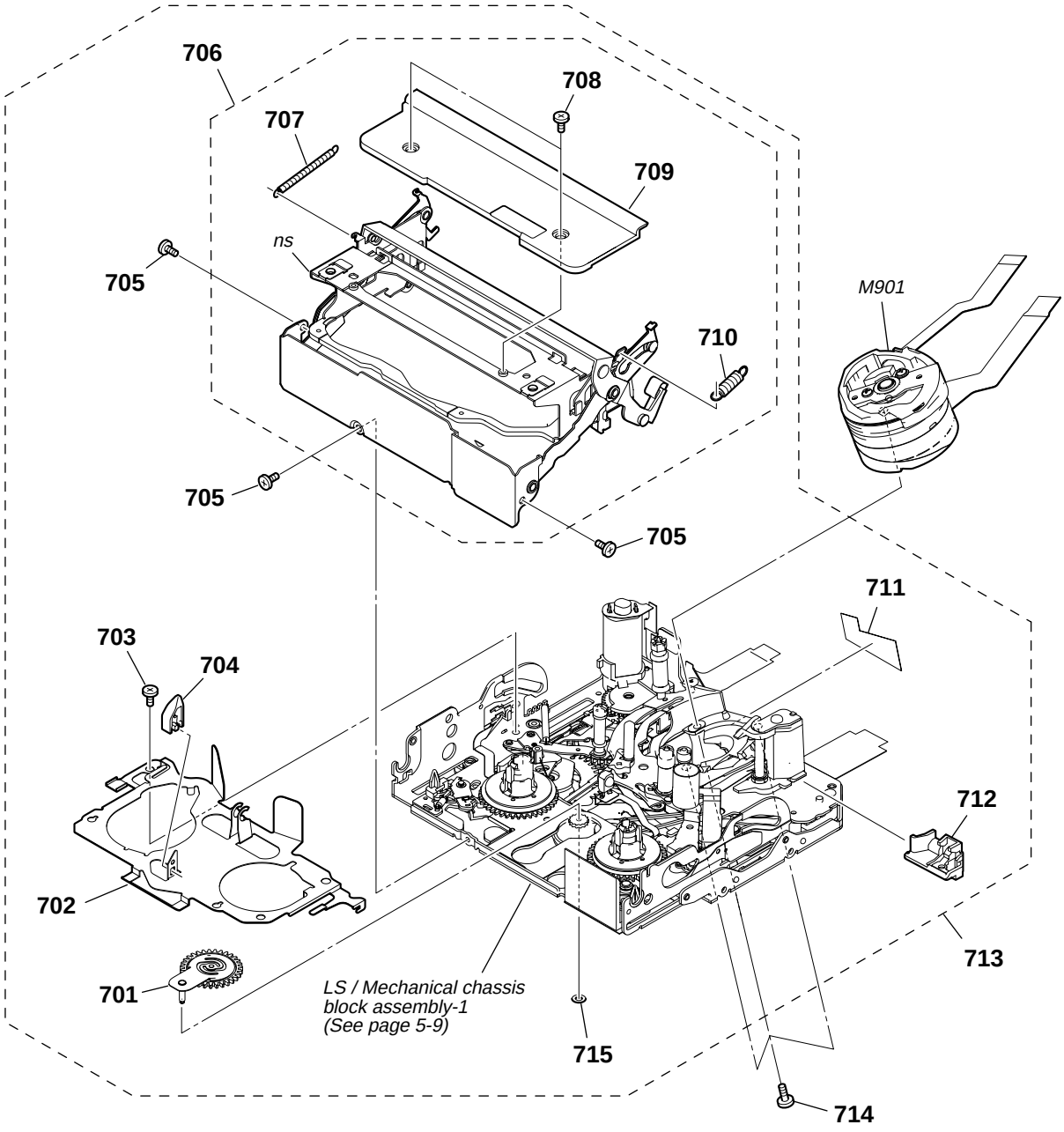


Ref. No.	Part No.	Description
* 251	1-833-205-11	CABLE, FLEXIBLE FLAT (FFC-084)
252	A-1212-408-A	LB-132 BOARD, COMPLETE
253	2-664-672-01	GUIDE, LAMP
* 254	2-638-819-01	CUSHION, LCD
* 255	2-638-818-01	ILLUMINATOR
* 256	2-638-816-01	PLATE (TFT), DEFLECTION
257	2-664-671-01	SPACER, LCD
258	2-899-659-01	CAP (215), INNER
259	2-899-660-01	PANEL (CF), POLARIZATION
260	2-899-657-01	CABINET, INNER
261	X-2176-362-1	EYE CUP (215) ASSY

Ref. No.	Part No.	Description
262	2-899-886-01	COVER, DC-AV
263	2-899-887-01	LID, CPC
264	X-2176-359-1	BT-VF (215) ASSY
265	A-1212-459-A	AV-112 BOARD, COMPLETE
266	2-899-661-01	FRAME, TERMINAL FIXED
* 267	1-871-485-11	FP-626 FLEXIBLE BOARD
BH001	1-780-064-21	BATTERY TERMINAL BOARD
J001	1-815-792-11	CONNECTOR, DC-IN (7.2V)
LCD902	8-753-241-14	LCX076AKE-1
#11	3-078-890-11	SCREW, TAPPING (Silver)

5-1-7. MECHANISM DECK SECTION

ns: not supplied

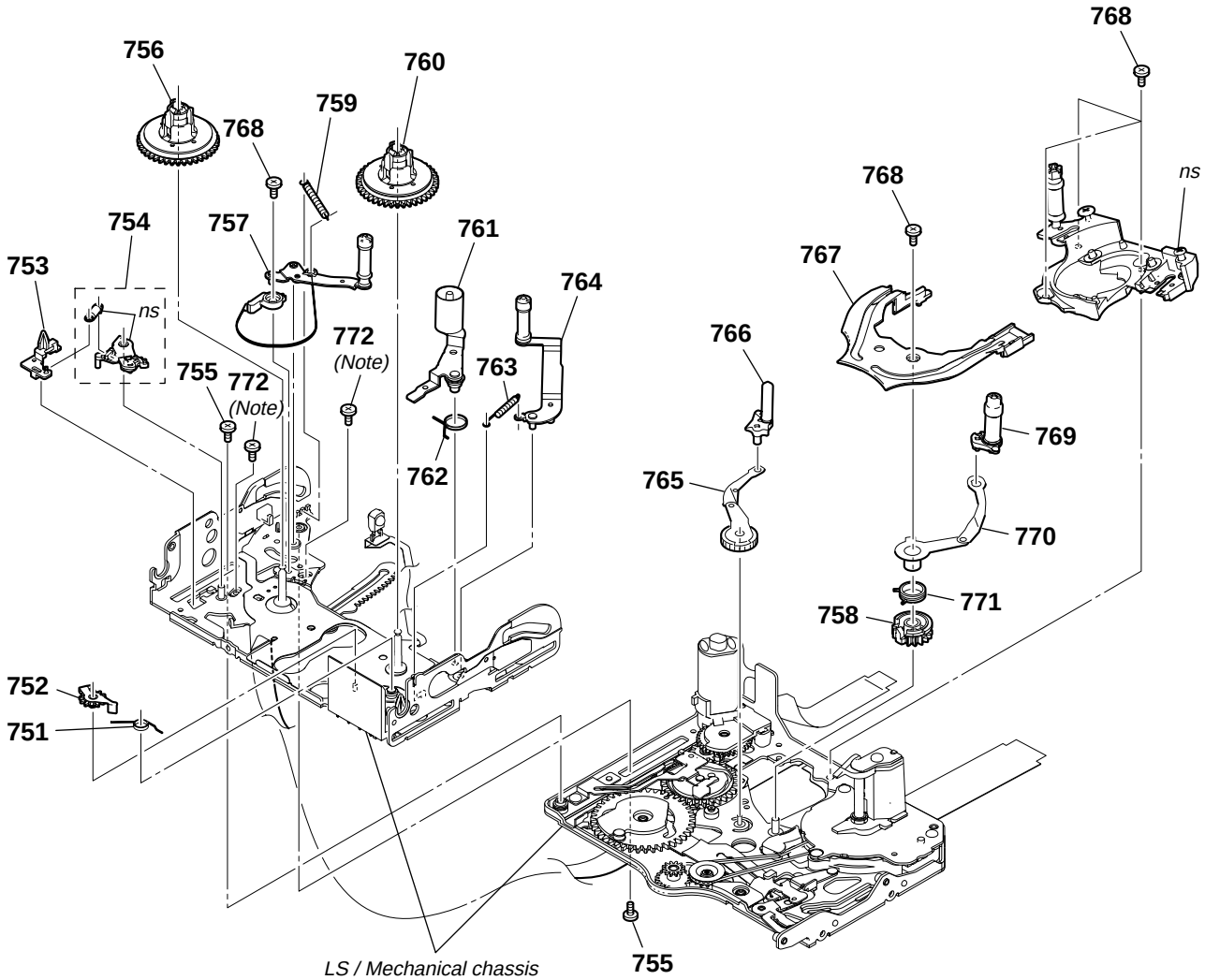


Ref. No.	Part No.	Description
701	X-2024-478-1	PENDULUM ASSY
702	2-342-917-02	LED BASE
703	7-627-850-77	SCREW, PRECISION +P 1.4X1.8
704	3-079-366-11	RELEASE, REEL LOCK
705	3-703-816-08	SCREW (M1.4X1.4), SPECIAL HEAD
706	X-2149-724-1	COMPARTMENT ASSY, CASSETTE
707	2-342-926-01	SPRING (ARM S), TENSION COIL
708	2-546-417-01	SCREW (1.4X1.0), POWER LOCK
709	2-342-933-02	PLATE, TOP

Ref. No.	Part No.	Description
710	2-342-927-01	SPRING (ARM T), TENSION COIL
711	2-541-585-01	SHEET, FLEXIBLE ADHESIVE
712	2-342-918-01	TG6 CATCHER
713	A-1080-997-A	MD (N100) SUB ASSY A
714	3-703-816-13	SCREW (M1.4X2.0), SPECIAL HEAD
715	3-315-414-31	WASHER
M901	A-1154-545-A	DRUM (DEH-33E-R)

5-1-8. LS/MECHANICAL CHASSIS BLOCK ASSEMBLY-1

ns: not supplied

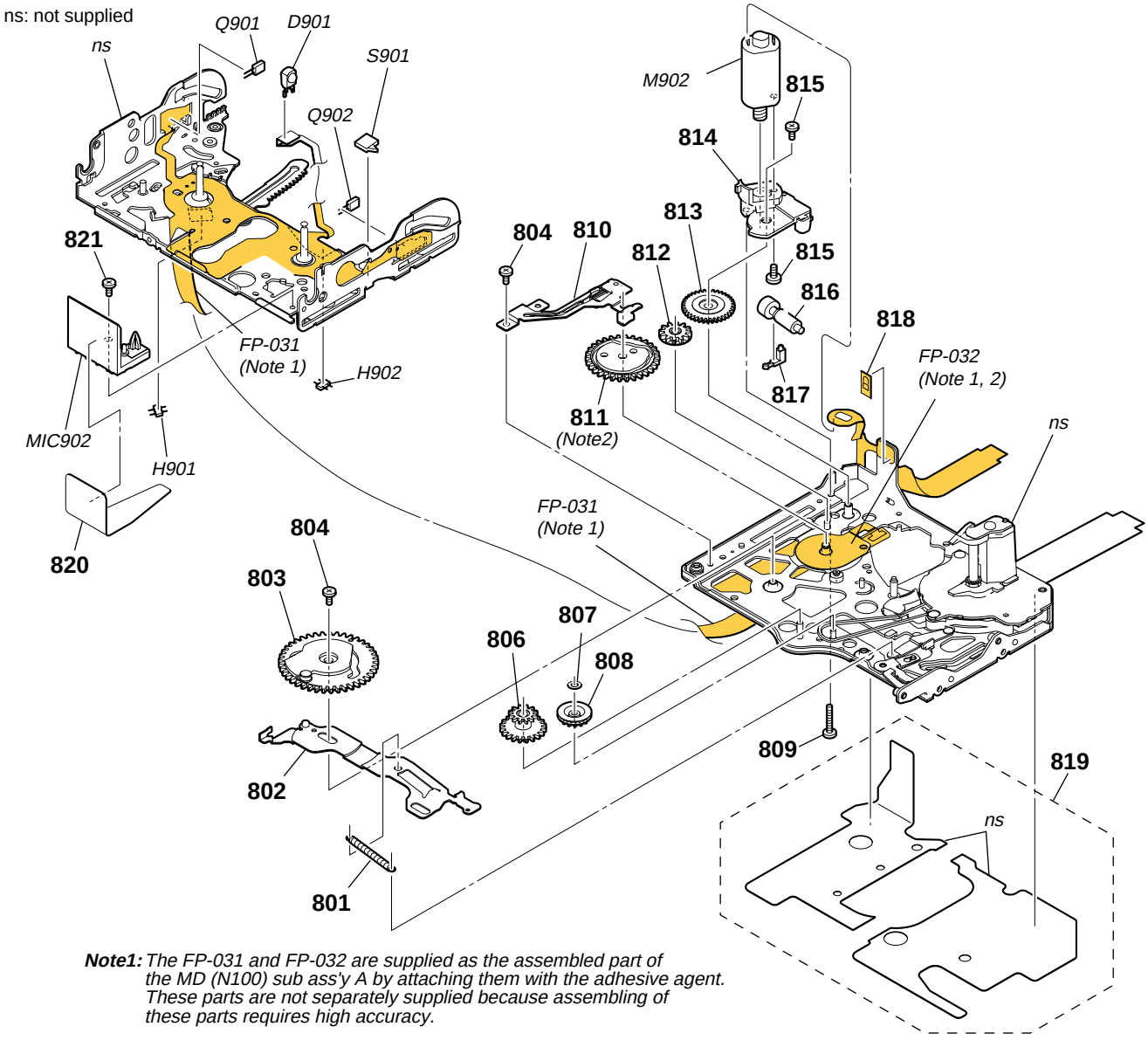


Note: *These two screws are the fixing screws of the LS cam plate.*
These two fixing screws are used for adjsting the LS cam plate position.
(refar to 4-2. LS cam adjustment of DV mechanical adjustment manual IX)

Ref. No.	Part No.	Description
751	2-342-759-01	SPRING, RVS BRAKE
752	A-1083-005-A	BLOCK ASSY, RVS BRAKE
753	2-342-731-01	POSITIONING, S
754	A-1083-006-A	BLOCK ASSY, S BRAKE
755	3-075-097-11	SCREW (M1.4X1.4), SPECIAL HEAD
756	X-2024-473-1	TABLE ASSY, S REEL
757	A-1083-007-B	BLOCK ASSY, TENSION REGULATOR
758	2-342-705-01	GEAR (T), GL
759	2-342-902-01	SPRING, TENSION REGULATOR
760	X-2024-474-1	TABLE ASSY, T REEL
761	X-2024-476-1	ARM ASSY, PINCH
762	2-342-906-01	SPRING (PINCH RETURN), TORSION

Ref. No.	Part No.	Description
763	2-342-626-01	SPRING (RETURN TG6), EXTENSION
764	A-1083-002-A	BLOCK ASSY, TG6
765	X-2024-468-3	ARM ASSY (S), GL
766	X-2024-465-1	COASTER (S) ASSY
767	2-342-612-01	RAIL
768	3-703-816-13	SCREW (M1.4X2.0), SPECIAL HEAD
769	X-2024-466-1	COASTER (T) ASSY
770	X-2024-469-1	ARM (T) ASSY, GL
771	2-342-716-01	SPRING (T), TORSION COIL
772	3-703-816-08	SCREW (M1.4X1.4), SPECIAL HEAD (for adjustment)

5-1-9. LS/MECHANICAL CHASSIS BLOCK ASSEMBLY-2



Note1: *The FP-031 and FP-032 are supplied as the assembled part of the MD (N100) sub ass'y A by attaching them with the adhesive agent. These parts are not separately supplied because assembling of these parts requires high accuracy.*

Note2: *The mode switch (S903) function works when the contactor of the FP-032 contacts with the bottom surface of wiper of the mode gear ass'y.*

Ref. No.	Part No.	Description
801	2-342-624-01	SPRING (PINCH LIMITTER), EXTENSION
802	X-2024-463-2	SLIDER ASSY, MODE
803	X-2024-462-1	GEAR ASSY, CAM
804	3-075-097-11	SCREW (M1.4X1.4), SPECIAL HEAD
806	2-342-621-01	GEAR, RELAY
807	3-315-414-31	WASHER
808	2-342-620-01	GEAR, CONVERSION
809	3-084-377-01	HEAD (SCREW M1.2)
810	X-2024-460-1	BASE ASSY, CAM
811	X-2024-461-1	GEAR ASSY, MODE
812	2-342-615-01	GEAR, NO.2
813	2-342-691-01	GEAR, NO.1
814	2-637-945-01	HOLDER, MOTOR
815	3-895-822-71	SCREW (M1.2X2), SPECIAL, 0
816	2-342-689-01	WORM SHAFT (2J)

Ref. No.	Part No.	Description
817	2-342-690-02	BASE, MOTOR HOLDER
818	1-677-049-11	FP-228 FLEXIBLE BOARD (DEW SENSOR)
819	2-342-686-01	COVER, CAPSTAN
820	2-541-984-01	MIC COVER
821	3-703-816-13	SCREW (M1.4X2.0), SPECIAL HEAD
D901	6-500-652-01	DIODE GL453SE0000F (TAPE LED)
H901	8-719-067-74	ELEMENT, HOLE HW-105A-CDE-T (S REEL)
H902	8-719-067-74	ELEMENT, HOLE HW-105A-CDE-T (T REEL)
M902	X-2024-464-1	MOTOR ASSY (LOADING)
MIC902	1-818-576-11	PIN, CONNECTOR (WITH DETECTION)
Q901	6-550-672-01	TRANSISTOR PT4850FJE00F (TAPE END)
Q902	6-550-672-01	TRANSISTOR PT4850FJE00F (TAPE TOP)
S901	1-786-448-22	SWITCH, PUSH (1 KEY) (CC DOWN)

5-2. ELECTRICAL PARTS LIST

Ref. No.	Part No.	Description			
	A-1212-459-A	AV-112 BOARD, COMPLETE			
		**********			
		< CONNECTOR >			
CN401	1-779-330-51	CONNECTOR, FFC/FPC 12P			
CN402	1-815-794-13	CONNECTOR (MULTIPLE) (A/V OUT)			
		< FERRITE BEAD >			
FB401	1-414-760-21	BEAD, FERRITE (CHIP) (1608)			
FB402	1-414-760-21	BEAD, FERRITE (CHIP) (1608)			
	A-1212-400-A	CD-672 BOARD, COMPLETE			
		**********			
	(IC7002 is not supplied, but this is included in CCD block assy.)				
		< CAPACITOR >			
C7002	1-100-566-91	CERAMIC CHIP	0.1uF	10%	25V
C7003	1-100-566-91	CERAMIC CHIP	0.1uF	10%	25V
C7005	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C7006	1-100-591-91	CERAMIC CHIP	1uF	10%	25V
C7007	1-127-820-11	CERAMIC CHIP	4.7uF	10%	16V
C7010	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C7011	1-165-875-11	CERAMIC CHIP	10uF	10%	10V
C7015	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C7016	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C7017	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C7018	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C7023	1-127-760-11	CERAMIC CHIP	4.7uF	10%	6.3V
C7024	1-165-989-11	CERAMIC CHIP	10uF	10%	6.3V
C7025	1-165-989-11	CERAMIC CHIP	10uF	10%	6.3V
C7026	1-100-251-11	CERAMIC CHIP	0.047uF	10%	10V
C7027	1-100-251-11	CERAMIC CHIP	0.047uF	10%	10V
C7028	1-165-989-11	CERAMIC CHIP	10uF	10%	6.3V
C7029	1-165-989-11	CERAMIC CHIP	10uF	10%	6.3V
		< CONNECTOR >			
CN7001	1-820-586-51	CONNECTOR, FFC/FPC 28P			
		< FERRITE BEAD >			
FB7001	1-400-331-11	FERRITE, EMI (SMD) (1005)			
		< IC >			
IC7002	A-1216-665-A	CCD BLOCK ASSY (1M) (CCD IMAGER) (Note 1)			
IC7003	8-759-489-19	IC uPC6756GR-8JG-E2			
		< COIL >			
L7001	1-400-588-11	INDUCTOR	10uH		
L7002	1-400-588-11	INDUCTOR	10uH		
		< TRANSISTOR >			
Q7001	6-550-234-01	TRANSISTOR	UNR32A300LS0		
Q7002	8-729-055-21	TRANSISTOR	2SC5096-O/R (TE85L)		

• Refer to page 5-1 for mark ⚠.

Ref. No.	Part No.	Description			
		< RESISTOR >			
R7002	1-218-954-11	RES-CHIP	1.2K	5%	1/16W
R7004	1-218-965-11	RES-CHIP	10K	5%	1/16W
R7005	1-218-953-11	RES-CHIP	1K	5%	1/16W
R7006	1-218-966-11	RES-CHIP	12K	5%	1/16W
R7013	1-218-965-11	RES-CHIP	10K	5%	1/16W
R7014	1-218-989-11	RES-CHIP	1M	5%	1/16W
R7015	1-218-989-11	RES-CHIP	1M	5%	1/16W
R7016	1-218-965-11	RES-CHIP	10K	5%	1/16W
		< COMPOSITION CIRCUIT BLOCK >			
RB7001	1-234-379-21	RES, NETWORK 22K (1005X4)			
		< SENSOR >			
SE7001	1-479-022-61	SENSOR, ANGULAR VELOCITY (32.2 kHz)			
SE7002	1-479-022-51	SENSOR, ANGULAR VELOCITY (30.8 kHz)			
	A-1212-683-A	CF-102 BOARD, COMPLETE			
		**********			
	(BT901 (lithium battery) is not included in CF-102 complete board.)				
		< BATTERY HOLDER >			
⚠BH801	1-756-615-41	HOLDER, BATTERY (Note 2)			
		< BATTERY >			
⚠BT901	1-756-134-12	BATTERY, STORAGE, LITHIUM (Note 2)			
		< CONNECTOR >			
CN801	1-794-057-21	PIN, CONNECTOR (PC BOARD) 2P			
CN802	1-766-646-51	CONNECTOR, FFC/FPC 10P			
		< DIODE >			
* D801	6-501-573-01	DIODE CL-271TLY-C-TS (CHG)			

CAUTION
Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type.

注意
電池の交換は，正しく行わないと破裂する恐れがあります。電池を交換する場合には必ず同じ型名の電池又は同等品と交換してください。

Note 1: Be sure to read “Precautions for Replacement of Imager” on page 4-3 when changing the imager.

Note 1: イメージャの交換時は4-4ページの“イメージャ交換時の注意”を必ずお読みください。

Note 2: Replace the battery holder (BH801) together when replacing the lithium battery (BT901) on the CF-102 board. (The battery holder removed once cannot be used again.)
When mounting these parts, mount new battery holder first and attach new lithium battery next.

Note 2: CF-102基板のリチウム電池（BT901）を交換する場合はバッテリホルダ（BH801）も同時に新品に交換して下さい。（一度使用したバッテリホルダは再使用できません。）
部品取り付けの際は，先にバッテリホルダを取り付けてからリチウム電池を装着して下さい。

Ref. No.	Part No.	Description			
		< RESISTOR >			
R801	1-218-955-11	RES-CHIP	1.5K	5%	1/16W
R802	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
		< SWITCH >			
S801	1-786-157-31	TACTILE SWITCH (RESET)			
S802	1-786-157-31	TACTILE SWITCH (DISP/BATT INFO)			
S803	1-786-157-31	TACTILE SWITCH (EASY)			
* S804	1-786-545-41	SWITCH, PUSH LEVER (S) (PANEL OPEN/CLOSE)			
S805	1-786-157-31	TACTILE SWITCH (BACK LIGHT)			
	A-1212-567-A	CR-082 BOARD, COMPLETE ********** (CN501 (multi connector) is not supplied, but this is included in CR-082 complete board.)			
		< CONNECTOR >			
CN501	(Not supplied)	CONNECTOR, MULTIPLE (SOCKET)			
* CN502	1-818-073-51	CONNECTOR, FFC/FPC (ZIF) 36P			
	(Not supplied)	FP-031 FLEXIBLE BOARD ********** (This flexible board is included in MD (N100) sub assy A (A-1080-997-A).)			
		< DIODE >			
D901	6-500-652-01	DIODE GL453SE0000F (TAPE LED)			
		< HOLE ELEMENT >			
H901	8-719-067-74	ELEMENT, HOLE HW-105A-CDE-T (S REEL)			
H902	8-719-067-74	ELEMENT, HOLE HW-105A-CDE-T (T REEL)			
		< CONNECTOR >			
MIC902	1-818-576-11	PIN, CONNECTOR (WITH DETECTION)			
		< TRANSISTOR >			
Q901	6-550-672-01	TRANSISTOR PT4850FJE00F (TAPE END)			
Q902	6-550-672-01	TRANSISTOR PT4850FJE00F (TAPE TOP)			
		< SWITCH >			
S901	1-786-448-22	SWITCH, PUSH (1 KEY) (CC DOWN)			
	(Not supplied)	FP-032 FLEXIBLE BOARD ********** (This flexible board with S903 is included in MD (N100) sub assy A (A-1080-997-A).)			
	1-677-049-11	FP-228 FLEXIBLE BOARD (DEW SENSOR) **********			
	A-1153-842-A	FP-386 FLEXIBLE BOARD, COMPLETE **********			

Ref. No.	Part No.	Description			
		< SWITCH >			
S101	1-786-180-31	SWITCH, PUSH (1KEY) (PANEL REVERSE)			
*	1-871-485-11	FP-626 FLEXIBLE BOARD ********** (BH001 and J001 are not included in FP-626 flexible board.)			
		< BATTERY TERMINAL >			
BH001	1-780-064-21	BATTERY TERMINAL BOARD			
		< JACK >			
J001	1-815-792-11	CONNECTOR, DC-IN (7.2V)			
	A-1212-408-A	LB-132 BOARD, COMPLETE **********			
		< CAPACITOR >			
C301	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C302	1-165-908-11	CERAMIC CHIP	1uF	10%	10V
C303	1-164-505-11	CERAMIC CHIP	2.2uF		16V
		< CONNECTOR >			
CN301	1-779-334-51	CONNECTOR, FFC/FPC 20P			
* CN302	1-817-560-71	CONNECTOR, FPC (ZIP) 21P			
		< DIODE >			
* D301	6-501-591-01	DIODE NESW007AT-T099 (BACKLIGHT)			
D302	6-500-941-01	DIODE MAZS056008S0			
		< RESISTOR >			
R301	1-216-841-11	METAL CHIP	47K	5%	1/10W
	A-1212-565-A	MS-342 BOARD, COMPLETE **********			
		< CONNECTOR >			
CN601	1-817-913-41	MEMORY STICK DUO CONNECTOR			
* CN602	1-816-643-51	FFC/FPC CONNECTOR (LIF) 10P			
		< DIODE >			
D601	6-501-216-01	DIODE CL-271HR-C-TS (MS ACCESS)			
		< RESISTOR >			
R601	1-218-941-81	RES-CHIP	100	5%	1/16W
	A-1212-630-A	PD-312 BOARD, COMPLETE **********			
		< CAPACITOR >			
C6302	1-100-581-81	CERAMIC CHIP	0.0047uF	10%	50V
C6303	1-100-581-81	CERAMIC CHIP	0.0047uF	10%	50V
C6304	1-165-908-11	CERAMIC CHIP	1uF	10%	10V
C6305	1-165-908-11	CERAMIC CHIP	1uF	10%	10V
C6306	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V

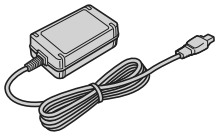
Ref. No.	Part No.	Description			
		< CONNECTOR >			
	CN6301	1-818-072-51	CONNECTOR, FFC/FPC (ZIF) 30P		
	CN6302	1-573-915-51	CONNECTOR, FFC/FPC (ZIF) 6P		
	CN6303	1-573-915-51	CONNECTOR, FFC/FPC (ZIF) 6P		
*	CN6304	1-818-069-51	CONNECTOR, FFC/FPC (ZIF) 6P		
	CN6305	1-818-071-51	CONNECTOR, FFC/FPC (ZIF) 24P		
		< DIODE >			
	D6302	6-500-941-01	DIODE MAZS056008S0		
*	D6303	6-501-476-01	DIODE NSSW008CT-T071 (BACKLIGHT)		
*	D6304	6-501-476-01	DIODE NSSW008CT-T071 (BACKLIGHT)		
*	D6305	6-501-476-01	DIODE NSSW008CT-T071 (BACKLIGHT)		
		< TRANSISTOR >			
	Q6301	8-729-427-67	TRANSISTOR	XP421F-TXE	
	Q6302	8-729-427-37	TRANSISTOR	XP411F-TXE	
	Q6303	6-550-232-01	TRANSISTOR	2SA2029T2LQ/R	
		< RESISTOR >			
	R6302	1-218-955-11	RES-CHIP	1.5K	5% 1/16W
	R6303	1-218-957-11	RES-CHIP	2.2K	5% 1/16W
	R6304	1-218-959-11	RES-CHIP	3.3K	5% 1/16W
	R6305	1-218-961-11	RES-CHIP	4.7K	5% 1/16W
	R6307	1-218-978-11	RES-CHIP	120K	5% 1/16W
	R6309	1-218-989-11	RES-CHIP	1M	5% 1/16W
		< VARISTOR >			
*	VD6301	1-802-279-11	VARISTOR (SMD)		
*	VD6302	1-802-279-11	VARISTOR (SMD)		
*	VD6303	1-802-279-11	VARISTOR (SMD)		
*	VD6304	1-802-279-11	VARISTOR (SMD)		

Electrical parts list of the VC-472 board is not shown.
Pages 5-14 to 5-20 are not shown.

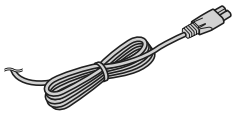
• EXCEPT J MODEL

Checking supplied accessories.

to J MODEL

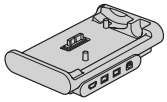


AC Adaptor
(AC-L200/L200B)
* Compatible in
L200 and L200B.
⚠ 1-479-285-21



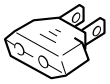
Power Cord
⚠ 1-555-074-91 (AUS)
⚠ 1-782-476-71 (CH)
⚠ 1-823-945-41 (US, CND)
⚠ 1-823-947-71 (KR)
⚠ 1-827-269-31 (UK)
⚠ 1-827-826-41 (AEP, EE, NE,
E: PAL, E: NTSC (Latin America))
⚠ 1-828-050-31 (JE)
⚠ 1-830-518-41
(E: NTSC (Except Latin America))

21-pin Adaptor
1-770-783-21
(AEP, UK, EE, NE)

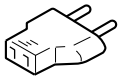


Handycam Station
(DCRA-C155)
1-820-790-11 (HC48/HC48E)
(DCRA-C156)
1-820-790-21 (HC47E)

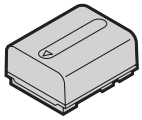
A/V Connecting Cable
1-823-156-51



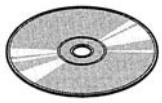
Conversion (2P) Adaptor
⚠ 1-569-008-12
(E: NTSC (Latin America))



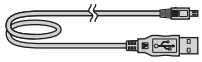
Conversion (2P) Adaptor
⚠ 1-569-007-12
(E: NTSC (Except Latin America),
JE)



Rechargeable Battery Pack
NP-FH40
⚠ A-1201-658-A (US, CND)
⚠ A-1201-659-A
(EXCEPT US, CND, CH)
⚠ A-1201-660-A (CH)

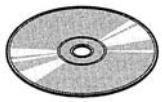


CD-ROM
"Handycam Application Software"
3-093-483-01



USB Cable
1-829-868-31

Wireless Remote Commander
RMT-831
1-478-495-41



DVD-ROM
"ENJOY HANDYCAM"
3-093-691-01 (KR)
ENGLISH/KOREAN/JAPANESE
3-093-691-11 (US, CND, E)
ENGLISH/FRENCH/SPANISH/PORTUGUESE
3-093-691-21 (UK, EE, NE)
ENGLISH/RUSSIAN/GERMAN
3-093-691-31 (AEP)
ENGLISH/SPANISH/PORTUGUESE/ITALIAN
3-093-691-41 (AEP)
ENGLISH/FRENCH/PORTUGUESE/DUTCH
3-093-691-61 (E, AUS, CH)
ENGLISH/FRENCH/SIMPLIFIED CHINESE for CHINA/
TRADITIONAL CHINESE for HONG KONG
3-093-691-71 (E)
ENGLISH/TRADITIONAL CHINESE for TAIWAN/
SPANISH/PORTUGUESE

Other accessories

2-319-511-11 MANUAL, INSTRUCTION (ENGLISH)
(HC48: US, CND, E, JE)
2-319-511-21 MANUAL, INSTRUCTION (FRENCH) (HC48: CND)
2-319-511-31 MANUAL, INSTRUCTION (SPANISH) (HC48: E, JE)
2-319-511-51 MANUAL, INSTRUCTION (TRADITIONAL CHINESE)
(HC48: E)
2-319-511-61 MANUAL, INSTRUCTION (KOREAN) (HC48: KR, JE)

2-319-512-11 MANUAL, INSTRUCTION (ENGLISH)
(HC47E: AEP, UK/HC48E: E, AUS, JE)
2-319-512-21 MANUAL, INSTRUCTION (FRENCH) (HC47E: AEP)
2-319-512-31 MANUAL, INSTRUCTION (GERMAN) (HC47E: AEP)
2-319-512-41 MANUAL, INSTRUCTION (DUTCH) (HC47E: AEP)
2-319-512-51 MANUAL, INSTRUCTION (SPANISH) (HC47E: AEP)

2-319-512-61 MANUAL, INSTRUCTION (PORTUGUESE) (HC47E: AEP)
2-319-512-71 MANUAL, INSTRUCTION (ITALIAN) (HC47E: AEP)
2-319-512-81 MANUAL, INSTRUCTION (GREEK) (HC47E: AEP)
2-319-512-91 MANUAL, INSTRUCTION (SWEDISH)
(HC47E: NE, HC48E: NE)
2-319-513-11 MANUAL, INSTRUCTION (RUSSIAN)
(HC47E: NE/HC48E: NE, JE)

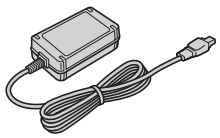
2-319-513-21 MANUAL, INSTRUCTION (DANISH)
(HC47E: NE, HC48E: NE)
2-319-513-31 MANUAL, INSTRUCTION (FINNISH)
(HC47E: NE, HC48E: NE)
2-319-513-41 MANUAL, INSTRUCTION (POLISH) (HC47E: EE)
2-319-513-51 MANUAL, INSTRUCTION (CZECH) (HC47E: EE)
2-319-513-61 MANUAL, INSTRUCTION (HUNGARIAN) (HC47E: EE)

2-319-513-71 MANUAL, INSTRUCTION (SLOVAK) (HC47E: EE)
2-319-513-91 MANUAL, INSTRUCTION (SIMPLIFIED CHINESE)
(HC48E: E, CH, JE)
2-319-514-11 MANUAL, INSTRUCTION (ARABIC) (HC48E: E)
2-319-514-21 MANUAL, INSTRUCTION (PERSIAN) (HC48E: E)

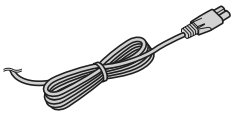
• Refer to page 5-1 for mark ⚠.

• J MODEL

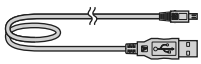
付属品



AC アダプター
(AC-L200/L200B)
* L200とL200Bには
互換性があります。
⚠ 1-479-285-21

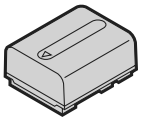


電源コード
⚠ 1-828-050-31

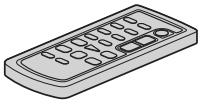


USB ケーブル
1-829-868-31

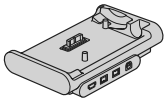
A/V 接続ケーブル
1-823-156-51



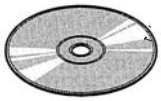
リチャージブルバッテリーパック
NP-FH40
⚠ A-1201-657-A



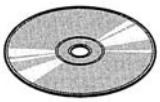
ワイヤレスリモコン
RMT-831
1-478-495-31



ハンディカムステーション
(DCRA-C155)
1-820-790-11



CD-ROM
「Handycam Application Software」
3-093-483-01



DVD-ROM
「エンジョイハンディーカム」
3-093-691-01
英語/韓国語/日本語

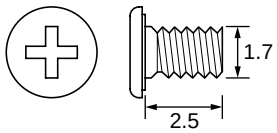
その他の付属品

2-319-511-01 取扱説明書（日本語）

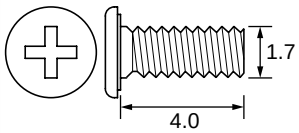
• ⚠マークについては，5-1ページを参照して下さい。

HARDWARE LIST (1/4)

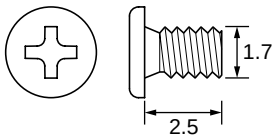
#1: M1.7 X 2.5
(Black)
2-635-562-11



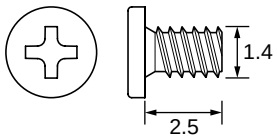
#2: M1.7 X 4.0
(Black)
2-635-562-31



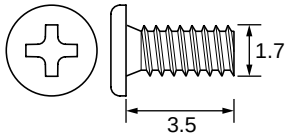
#3: M1.7 X 2.5
(Red)
2-660-401-01



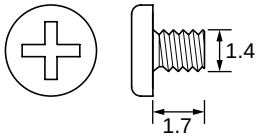
#4: M1.4 X 2.5 (Tapping)
(Dark Silver)
3-348-998-81



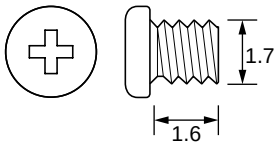
#5: M1.7 X 3.5 (Tapping)
(Black)
3-080-204-01



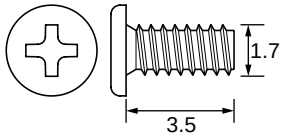
#6: M1.4 X 1.7
(Silver)
2-598-474-01



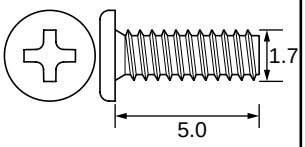
#7: M1.7 X 1.6
(Black)
7-627-552-18



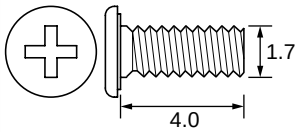
#8: M1.7 X 3.5 (Tapping)
(Silver)
3-078-890-01



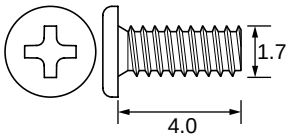
#9: M1.7 X 5.0 (Tapping)
(Silver)
3-078-890-21



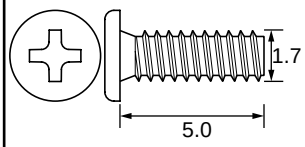
#10: M1.7 X 4.0
(Silver)
2-599-475-31



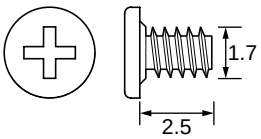
#11: M1.7 X 4.0 (Tapping)
(Silver)
3-078-890-11



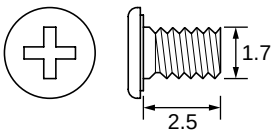
#12: M1.7 X 5.0 (Tapping)
(Black)
3-080-204-21



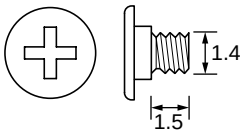
#13: M1.7 X 2.5 (Tapping)
(Silver)
3-085-397-01



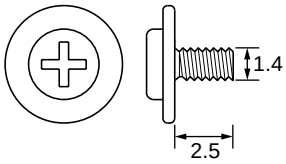
#14: M1.7 X 2.5
(Silver)
2-599-475-11



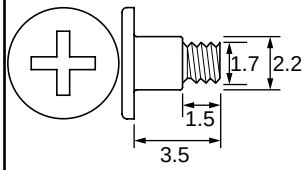
#15: M1.4 X 1.5
(Silver)
3-062-214-01



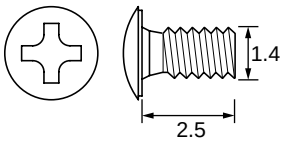
#16: M1.4 X 2.5
(Silver)
2-586-337-01



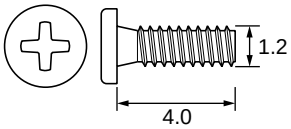
#17: M1.7 X 1.5
(Silver)
2-586-389-01



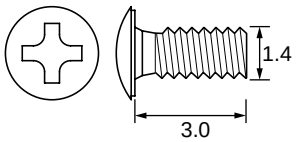
#18: M1.4 X 2.5
(Silver)
2-635-591-21



#19: M1.2 X 4.0 (Tapping)
(Red)
3-086-156-21

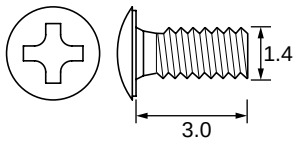


#20: M1.4 X 3.0
(Silver)
2-635-591-31

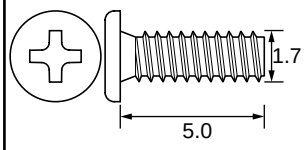


HARDWARE LIST (2/4)

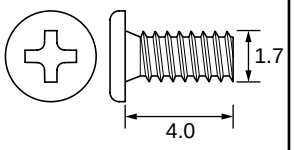
#21: M1.4 X 3.0
(Black)
2-662-396-21



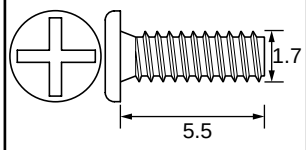
#22: M1.7 X 5.0 (Tapping)
(Silver)
3-083-261-01



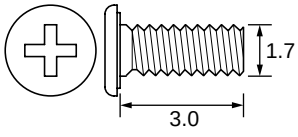
#23: M1.7 X 4.0 (Tapping)
(Black)
3-080-204-11



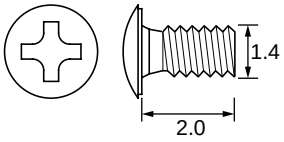
#24: B1.7 X 5.5 (Tapping)
(Black)
4-679-805-11



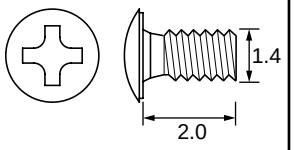
#25: M1.7 X 3.0
(Black)
2-635-562-21



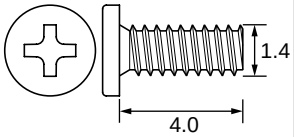
#26: M1.4 X 2.0
(Silver)
2-635-591-11



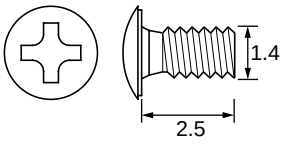
#27: M1.4 X 2.0
(Black)
2-662-396-11



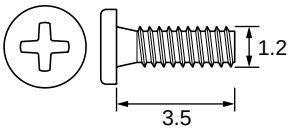
#28: M1.4 X 4.0 (Tapping)
(Dark Silver)
3-348-998-61



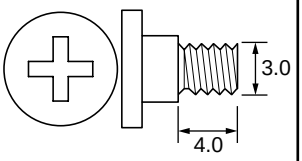
#29: M1.4 X 2.5
(Black)
2-662-396-01



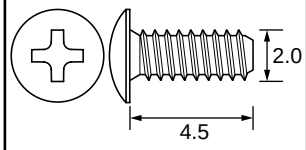
#30: M1.2 X 4.0 (Tapping)
(White)
3-086-156-11



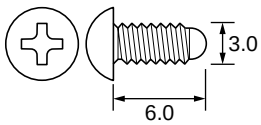
#31: M3.0 X 4.0
(Silver)
2-102-434-01



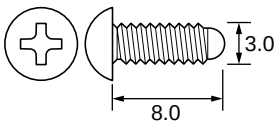
#32: M2.0 X 4.5 (Tapping)
(Silver)
2-102-498-01



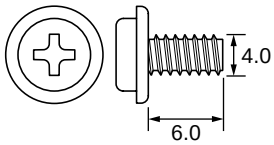
#33: M3.0 X 6.0
(Silver)
3-077-331-21



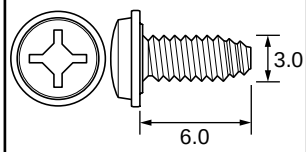
#34: M3.0 X 8.0
(Black)
3-077-331-41



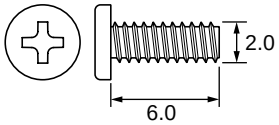
#35: M4.0 X 6.0 (Tapping)
(Silver)
3-975-291-02



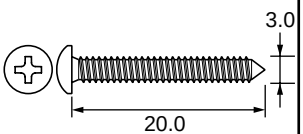
#36: M3.0 X 6.0
(Silver)
4-886-821-11



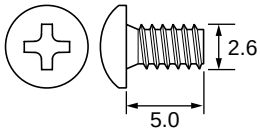
#37: M2.0 X 6.0 (Tapping)
(Black)
3-080-206-31



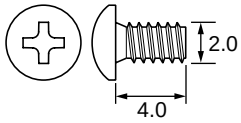
#38: M3.0 X 20.0 (Tapping)
(Silver)
7-685-651-79



#39: M2.6 X 5.0 (Tapping)
(Black)
7-685-791-09



#40: M2.0 X 4.0 (Tapping)
(Silver)
7-685-851-04



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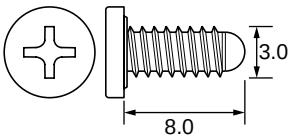
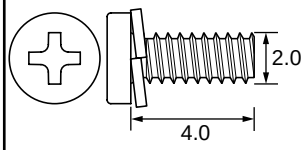
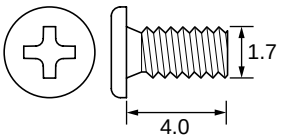
#41: M3.0 X 8.0 (Tapping)
(Silver)
3-065-748-01



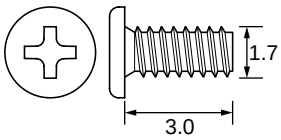
#42: M2.0 X 4.0 (Tapping)
(Silver)
7-628-253-00



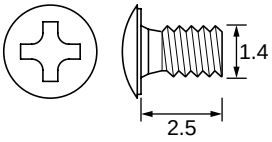
#43: M1.7 X 4.0
(Red)
2-660-401-31



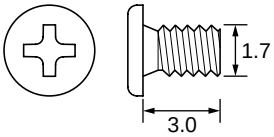
#44: M1.7 X 3.0 (Tapping)
(Silver)
3-078-890-61



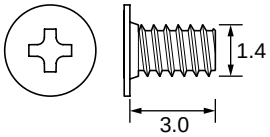
#45: M1.4 X 2.5
(Silver)
2-587-151-01



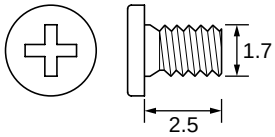
#46: M1.7 X 3.0
(Red)
2-660-401-11



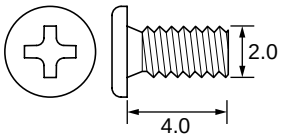
#47: M1.4 X 3.0 (Tapping)
(Silver)
2-665-774-01



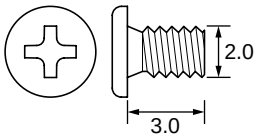
#48: M1.7 X 2.5
(Silver)
3-973-497-91



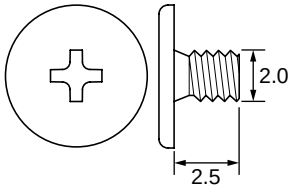
#49: M2.0 X 4.0
(Black)
2-630-005-31



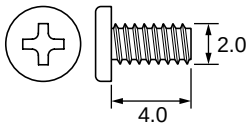
#50: M2.0 X 3.0
(Red)
2-891-494-11



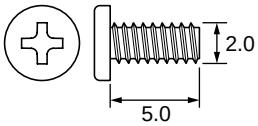
#51: M2.0 X 2.5
(Silver)
3-073-686-01



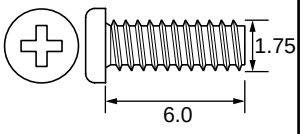
#52: M2.0 X 4.0 (Tapping)
(Black)
3-080-206-11



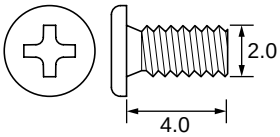
#53: M2.0 X 5.0 (Tapping)
(Black)
3-080-206-21



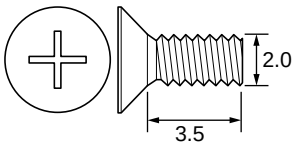
#54: M1.75 X 6.0 (Tapping)
(Black)
3-318-203-11



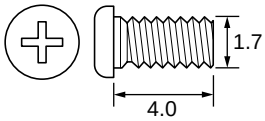
#55: M2.0 X 4.0
(Silver)
2-655-582-11



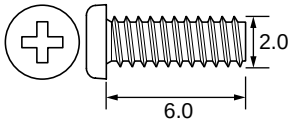
#56: M2.0 X 3.5
(Silver)
3-067-187-11



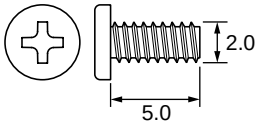
#57: M1.7 X 4.0
(Black)
7-627-852-18



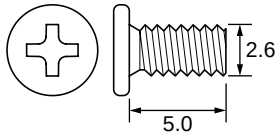
#58: M2.0 X 6.0 (Tapping)
(Silver)
3-719-408-11



#59: M2.0 X 5.0 (Tapping)
(Silver)
3-080-205-21

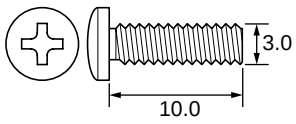


#60: M2.6 X 5.0
(Black)
3-061-062-11

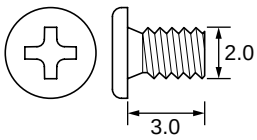


HARDWARE LIST (4/4)

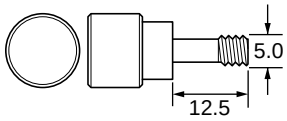
#61: M3.0 X 10.0
(Black)
7-682-549-09



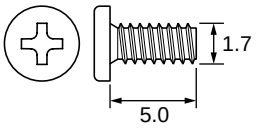
#62: M2.0 X 3.0
(Silver)
3-080-202-21



#63: M5.0 X 12.5
(Black)
3-060-811-21

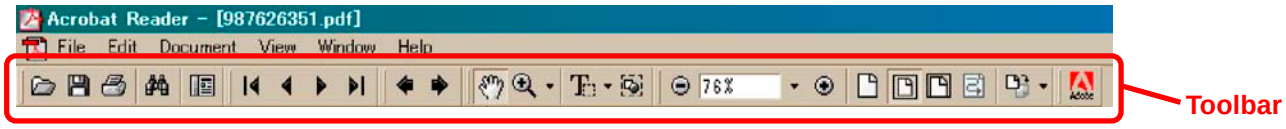


#64: M1.7 X 5.0 (Tapping)
(Silver)
2-666-551-21



ENGLISH | JAPANESE

[Description of main button functions on toolbar of the Adobe Acrobat Reader Ver5.0 (for Windows)]



Printing a text

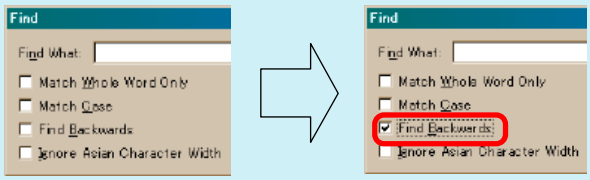
1. Click the Print button .
2. Specify a printer, print range, number of copies, and other options, and then click [OK].

Application of printing:
To set a range to be printed within a page, select the graphic selection tool and drag on the page to enclose a range to be printed, and then click the Print button.

Finding a text

1. Click the Find button .
2. Enter a character string to be found into a text box, and click the [Find]. (Specify the find options as necessary)

Application to the Service Manual:
To execute "find" from current page toward the previous pages, select the check box "Find Backward" and then click the "Find".



3. Open the find dialog box again, and click the [Find Again] and you can find the matched character strings displayed next. (Character strings entered previously are displayed as they are in the text box.)

Application to the Service Manual:
The parts on the drawing pages (block diagrams, circuit diagrams, printed circuit boards) and parts list pages in a text can be found using this find function. For example, find a Ref. No. of IC on the block diagram, and click the [Find Again] continuously, so that you can move to the Ref. No. of IC on the circuit diagram or printed circuit board diagram successively.
Note: The find function may not be applied to the Service Manual depending on the date of issue.

Switching a page

- To move to the first page, click the .
- To move to the last page, click the .
- To move to the previous page, click the .
- To move to the next page, click the .

Reversing the screens displayed once

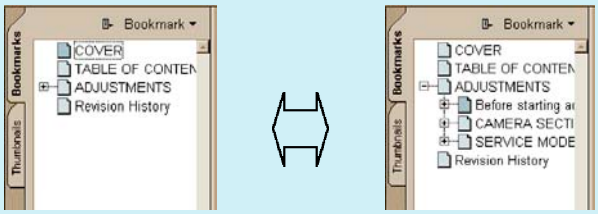
- To reverse the previous screens (operation) one by one, click the .
- To advance the reversed screens (operation) one by one, click the .

Application to the Service Manual:
This function allows you to go and back between circuit diagram and printed circuit board diagram, and accordingly it will be convenient for the voltage check.

Moving with link

1. Select either palm tool , zoom tool , text selection tool , or graphic selection tool .
2. Place the pointer in the position in a text where the link exists (such as a button on cover and the table of contents page, or blue characters on the removal flowchart page or drawing page), and the pointer will change to the forefinger form .
3. Then, click the link. (You will go to the link destination.)

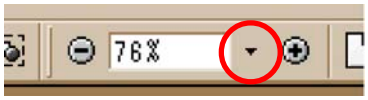
Moving with bookmark:
Click an item (text) on the bookmark pallet. and you can move to the link destination. Also, clicking can display the hidden items.
(To go back to original state, click)



Zooming or rotating the screen display

"Zoom in/out"

- Click the triangle button in the zoom control box to select the display magnification. Or, you may click or for zooming in or out.



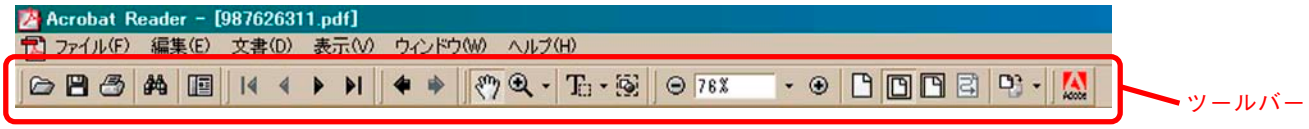
"Rotate"

- Click rotate tool , and the page then rotates 90 degrees each.

Application to the Service Manual:
The printed circuit board diagram you see now can be changed to the same direction as the set.

ENGLISH | JAPANESE

【Adobe Acrobat Reader Ver 5.0（for Windows）ツールバー内にある主なボタンの機能説明】



文章を印刷する

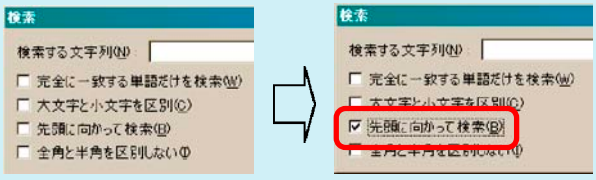
1．印刷ボタンをクリックする。
2．プリンター、印刷範囲、印刷部数、および他のオプションを指定して「OK」をクリックする。

印刷の応用：
ページ内で印刷したい範囲を設定するには、グラフィック選択ツールを選択し、ページ上をドラッグして印刷したい範囲を囲んでから印刷ボタンをクリックする。

文章内を検索する

1．検索ボタンをクリックする。
2．検索したい文字列をテキストボックスに入力して「検索」をクリックする。（必要に応じて検索オプションを指定する）

サービスマニュアルへの応用：
現在のページから前ページに向かって検索する場合は「先頭に向かって検索」のチェックボックスを選択してから「検索」をクリックする。



3．検索ダイアログボックスをもう一度開き、「次を検索」をクリックすると次に出てくる一致文字列を検索することができる。（前回入力した文字列が、テキストボックスにそのまま表示されている）

サービスマニュアルへの応用：
文章内にある図面ページ（ブロックダイヤグラム、回路図、プリント図）および部品表ページなどは、この検索機能を使って部品検索することができる。例えば、ブロックダイヤグラム上でICのRef. No.を検索し、「次を検索」を続けることによって回路図、プリント図上にあるICのRef. No.へ次々と移動する。
注意:発行年月日によって検索できない場合もあります。

ページを切り換える

・ 最初のページに移動する場合、をクリックする。
・ 最後のページに移動する場合、をクリックする。
・ 前のページに移動する場合、をクリックする。
・ 次のページに移動する場合、をクリックする。

一度表示した画面へ逆戻りする

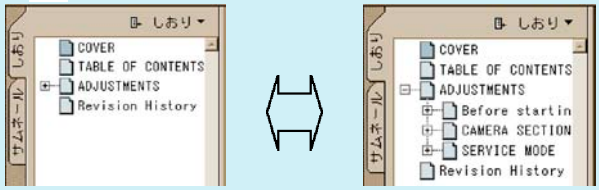
・ 前の画面（操作）へ1つずつ逆戻りする場合、をクリックする。
・ 戻した画面（操作）を1 つずつ前に進める場合、をクリックする。

サービスマニュアルへの応用：
回路図とプリント図を行き来できるので電圧チェックに便利です。

リンクを使用して移動する

1．手のひらツール、ズームツール、テキスト選択ツール、グラフィック選択ツールのいずれかを選択する。
2．文章内のリンクのある場所（表紙および章目次ページのボタン、外し方のフローページ、図面ページでは文字が青色になっているところなど）にポインタを置くと、ポインタが人差し指の形「」に変わる。
3．そのままリンクをクリックする。（リンク先へ移動する）

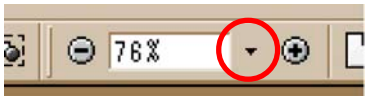
しおりを利用して移動する：
しおりパレット上の項目（テキスト）をクリックするとリンク先へ移動することができる。また、「」をクリックすると隠れている項目を表示することができる。
（「」をクリックすると元に戻る）



画面の表示を拡大、縮小または回転させる

「拡大/ 縮小」

・ 倍率ボックスの三角矢印ボタンをクリックし、表示倍率を選択する。または、をクリックしても使えます。



「回転」

・ 回転ツールをクリックすると、ページが90度ずつ回転する。

サービスマニュアルへの応用：
見ているプリント図をセットと同じ向きに変えられます。

Revision History

Ver.	Date	History	Contents	S.M. Rev. issued
1.0	2006.12	Official Release	—	—
1.1	2007.03	Correction-1 (C1)	• Correction of Repair Parts S.M. correction: Page 5-21, 5-22	Yes